

## ANNUAL REPORT OF THE UNITED STATES OF AMERICA

U.S. Department of Commerce, NOAA-Fisheries<sup>1</sup>

**Summary:** Total (preliminary) reported U.S. catch of tuna and swordfish, including dead discards, in 2008 was 8,322 MT, a decrease of about 30 % from 12,107 MT in 2007. Estimated swordfish catch (including estimated dead discards) decreased from 2,682 MT in 2007 to 2,530 MT in 2008, and provisional landings from the U.S. fishery for yellowfin decreased in 2008 to 2,407 MT from 5,529 MT in 2007. U.S. vessels fishing in the northwest Atlantic caught in 2008 an estimated 937 MT of bluefin, an increase of 88 MT compared to 2007. Provisional skipjack landings increased by 0.7 MT to 67 MT from 2007 to 2008, estimated bigeye landings decreased by 39 MT compared to 2007 to an estimated 488 MT in 2008, and estimated albacore landings decreased from 2007 to 2008 by 283 MT to 248 MT. Tuna, billfish, and shark tagging efforts continued in 2008. The United States has a scientific observer program for its pelagic longline fleet that has been in place since 1992. From March 9th through June 9th, 2008 the longline pelagic observer program increased the coverage of the longline fleet operating in the Gulf of Mexico. The goal of this increase was to collect data to better characterize the interaction between the longline fleet and bluefin tuna during the spawning season. A total of 670 longline sets were observed (504,384 hooks) from 33 vessels which accounted for approximately 75% of the trips during that period. The United States continued efforts to implement and enforce all applicable conservation and management measures.

### **Part I (Information on Fisheries, Research, and Statistics)**

#### ***Section 1. Annual Fisheries Information***

Total (preliminary) reported U.S. catch of tuna and swordfish, including dead discards, in 2008 was 8,322 MT, a decrease of about 30 % from 12,107 MT in 2007. Estimated swordfish catch (including estimated dead discards) decreased from 2,682 MT in 2007 to 2,530 MT in 2008, and provisional landings from the U.S. fishery for yellowfin decreased in 2008 to 2,407 MT from 5,529 MT in 2007. U.S. vessels fishing in the northwest Atlantic caught in 2008 an estimated 937 MT of bluefin, an increase of 88 MT compared to 2007. Provisional skipjack landings increased by 0.7 MT to 67 MT from 2007 to 2008, estimated bigeye landings decreased by 39 MT compared to 2007 to an estimated 488 MT in 2008, and estimated albacore landings decreased from 2007 to 2008 by 283 MT to 248 MT.

#### ***Section 2. Research and Statistics***

##### ***2.1 Fisheries Statistics***

###### ***2.1.1 Tropical Tuna Fishery Statistics***

**Yellowfin Tuna.** Yellowfin is the principal species of tropical tuna landed by U.S. fisheries in the western North Atlantic. Total estimated landings decreased to 2,407 MT in 2008, from the 2007 landings estimate of 5,529 MT (Table 2.1-YFT). The 2008 estimate is considered provisional and may change owing to incorporation of late reports of commercial catches as they become available and to possible revisions in estimates of rod & reel catches made by recreational anglers. A high proportion of the estimated landings were due to rod & reel catches of recreational anglers in the NW Atlantic (657 MT). Estimates of U.S. recreational harvests for tuna and tuna-like species continue to be reviewed and this may result in the need to report additional revisions to the available estimates in the future. In the case of commercial landings, the highest proportion of estimated landings corresponded to the US longline fleet operating in the Gulf of Mexico (756 MT). Nominal catch rate information from logbook reports (longline catch per 1,000 hooks) for yellowfin by general fishing areas is shown in Figure 2.1.

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<b>Table 2.1-YFT. Annual Landings (MT) of Yellowfin Tuna from 2004 to 2008</b>						
Area	Gear	2004	2005	2006	2007	2008
NW Atlantic	Longline	<b>658.9</b>	<b>394.2</b>	<b>701.7</b>	<b>757.8</b>	<b>460.5</b>
	Gillnet	<b>3.2</b>	<b>0.1</b>	<b>4.7</b>	<b>4.2</b>	<b>0.6</b>
	Handline	<b>213.2</b>	<b>105.1</b>	<b>105.1</b>	<b>113.2</b>	<b>30.1</b>
	Trawl	<b>1.6</b>	<b>0.2</b>	<b>0.7</b>	<b>2.4</b>	<b>0.0</b>
	Troll	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>6.9</b>	<b>2.4</b>
	Trap	<b>0.0</b>	<b>0.01</b>	<b>0.0</b>	<b>0.0</b>	<b>0.05</b>
	Rod and Reel*	<b>3,433.7</b>	<b>3,504.8</b>	<b>4,649.2</b>	<b>2,726</b>	<b>657.1</b>
	Unclassified	<b>10.6</b>	<b>3.8</b>	<b>3.9</b>	<b>7.0</b>	<b>1.4</b>
Gulf of Mexico	Longline	<b>1,811.9</b>	<b>1,210.9</b>	<b>1,128.5</b>	<b>1,379.3</b>	<b>756.5</b>
	Handline	<b>28.3</b>	<b>45.5</b>	<b>49.9</b>	<b>26.2</b>	<b>11.2</b>
	Rod and Reel*	<b>247.1</b>	<b>146.9</b>	<b>258.4</b>	<b>227.6</b>	<b>366.3</b>
	Unclassified	<b>0.0</b>	<b>0.3</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
Caribbean	Longline	<b>4.5</b>	<b>140.6</b>	<b>179.7</b>	<b>255.6</b>	<b>107.1</b>
	Trap	<b>0.1</b>	<b>0.001</b>	<b>0.4</b>	<b>0.0</b>	<b>0.0</b>
	Gillnet	<b>0.06</b>	<b>0.0003</b>	<b>0.0</b>	<b>0.0</b>	<b>0.04</b>
	Handline	<b>7.0</b>	<b>9.7</b>	<b>7.8</b>	<b>9.1</b>	<b>3.7</b>
	Rod and Reel*	<b>78.7</b>	<b>5.5</b>	<b>0.0</b>	<b>12.4</b>	<b>9.7</b>
NC Area 94A	Longline	<b>0.08</b>	<b>0.5</b>	<b>0.0</b>	<b>1.8</b>	<b>0.4</b>
SW Atlantic	Longline	<b>16.8</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>TOTAL</b>		<b>6,515.7</b>	<b>5,568.1</b>	<b>7,090.0</b>	<b>5,529.5</b>	<b>2,407.2</b>

\* Rod and Reel catches and landings represent estimates of landings based on statistical surveys of the U.S. recreational harvesting sector.

*Skipjack Tuna.* Skipjack tuna also are caught by U.S. vessels in the western North Atlantic but it is a minor component of the US total tuna landings. Total reported skipjack landings (preliminary) increased from 66.5 MT in 2007 to 67.1 MT in 2008 (Table 2.2-SKJ). Estimates of recreational harvests of skipjack continue to be reviewed and could be revised again in the future. Figure 2.2 presents nominal catch rate information (longline catch per 1,000 hooks) based on logbook reports.

<b>Table 2.2-SKJ. Landings (MT) of Skipjack Tuna from 2004 to 2008</b>						
Area	Gear	2004	2005	2006	2007	2008
NW Atlantic	Longline	<b>0.1</b>	<b>0.05</b>	<b>0.04</b>	<b>0.0</b>	<b>0.1</b>
	Gillnet	<b>16.7</b>	<b>2.2</b>	<b>0.2</b>	<b>0.07</b>	<b>0.04</b>
	Handline	<b>0.6</b>	<b>0.9</b>	<b>0.2</b>	<b>0.3</b>	<b>0.4</b>
	Trawl	<b>0.2</b>	<b>0.07</b>	<b>0.7</b>	<b>0.005</b>	<b>0.003</b>
	Trap	<b>0.006</b>	<b>0.0</b>	<b>0.3</b>	<b>0.0</b>	<b>0.0</b>
	Pound net	<b>0.0</b>	<b>0.0</b>	<b>0.5</b>	<b>0.0</b>	<b>0.0</b>
	Rod and Reel*	<b>27.3</b>	<b>8.1</b>	<b>34.6</b>	<b>27.4</b>	<b>21.0</b>
	Unclassified	<b>0.2</b>	<b>0.01</b>	<b>0.06</b>	<b>0.6</b>	<b>0.5</b>
Gulf of Mexico	Longline	<b>0.3</b>	<b>0.3</b>	<b>0.0</b>	<b>0.0</b>	<b>0.05</b>
	Handline	<b>0.2</b>	<b>0.02</b>	<b>0.0</b>	<b>0.2</b>	<b>0.06</b>
	Rod and Reel*	<b>6.3</b>	<b>3.1</b>	<b>6.4</b>	<b>23.9</b>	<b>16.3</b>
Caribbean	Longline	<b>0.3</b>	<b>0.2</b>	<b>0.2</b>	<b>0.02</b>	<b>1.3</b>
	Trap	<b>0.02</b>	<b>0.1</b>	<b>0.05</b>	<b>0.0</b>	<b>0.0</b>
	Gillnet	<b>0.3</b>	<b>0.06</b>	<b>0.02</b>	<b>0.0</b>	<b>0.01</b>
	Handline	<b>9.6</b>	<b>10.9</b>	<b>10.0</b>	<b>13.7</b>	<b>16.0</b>
	Rod and Reel*	<b>40.4</b>	<b>3.9</b>	<b>7.7</b>	<b>0.2</b>	<b>11.3</b>
<b>TOTAL</b>		<b>102.5</b>	<b>29.9</b>	<b>61.0</b>	<b>66.5</b>	<b>67.1</b>

\* Rod and Reel catches and landings represent estimates of landings and dead discards based on statistical surveys of the U.S. recreational harvesting sector.

*Bigeye Tuna.* The other large tropical tuna reported in catches by U.S. vessels in the western North Atlantic is bigeye tuna. Total reported catches and landings (preliminary) for 2008 decreased by approximately 39 MT from 527.3 MT in 2007 to 488.5 MT (Table 2.3-BET). Note that, like yellowfin, the estimates of rod & reel catch are considered provisional and may be revised based on results of a future review of recreational harvest estimates. Figure 2.3 presents nominal catch rates (longline catch per 1,000 hooks) estimated from logbook reports.

<b>Table 2.3-BET. Annual Landings (MT) of Bigeye Tuna from 2004 to 2008</b>						
Area	Gear	2004	2005	2006	2007	2008
NW Atlantic	Longline	<b>267.0</b>	<b>272.9</b>	<b>469.4</b>	<b>331.9</b>	<b>380.2</b>
	Gillnet	<b>0.0</b>	<b>0.0</b>	<b>0.2</b>	<b>1.0</b>	<b>0.04</b>
	Handline	<b>3.3</b>	<b>6.2</b>	<b>21.5</b>	<b>16.8</b>	<b>6.9</b>
	Harpoon	<b>0.0</b>	<b>0.0</b>	<b>0.2</b>	<b>0.0</b>	<b>0.0</b>
	Trawl	<b>0.9</b>	<b>0.6</b>	<b>0.0</b>	<b>0.4</b>	<b>0.0</b>
	Trap	<b>0.3</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
	Troll	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.9</b>	<b>0.8</b>
	Rod and Reel*	<b>94.6</b>	<b>165.0</b>	<b>422.3</b>	<b>126.8</b>	<b>70.9</b>
	Unclassified	<b>0.5</b>	<b>0.6</b>	<b>0.8</b>	<b>0.9</b>	<b>2.1</b>
Gulf of Mexico	Longline	<b>20.2</b>	<b>25.2</b>	<b>37.7</b>	<b>37.0</b>	<b>14.0</b>
	Handline	<b>0.2</b>	<b>0.1</b>	<b>1.5</b>	<b>0.01</b>	<b>0.0</b>
	Rod and Reel	<b>6.0</b>	<b>0.0</b>	<b>24.3</b>	<b>0.0</b>	<b>0.0</b>
Caribbean	Longline	<b>3.5</b>	<b>6.9</b>	<b>10.5</b>	<b>3.4</b>	<b>8.9</b>
	Handline	<b>0.0</b>	<b>0.04</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
	Rod and Reel	<b>0.06</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
NC Area 94A	Longline	<b>5.0</b>	<b>6.9</b>	<b>3.0</b>	<b>8.4</b>	<b>4.6</b>
SW Atlantic	Longline	<b>14.4</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>TOTAL</b>		<b>416.0</b>	<b>484.4</b>	<b>991.4</b>	<b>527.3</b>	<b>488.5</b>

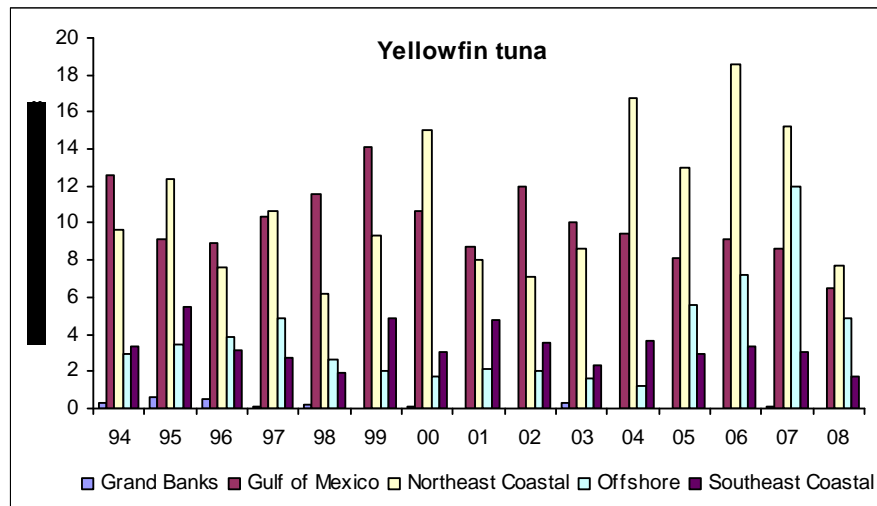
\* Rod and Reel catches and landings represent estimates of landings and dead discards based on statistical surveys of the U.S. recreational harvesting sector.

### 2.1.2 Temperate Tuna Fishery Statistics

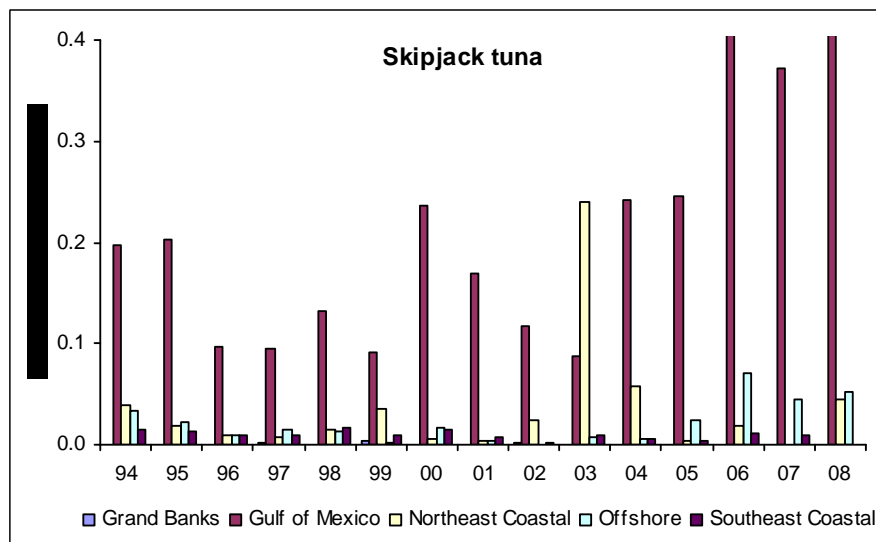
*Albacore.* Albacore are landed by U.S. vessels; however, historically, albacore has not been a main focus of the U.S. commercial tuna fisheries operating in the North Atlantic. Reported commercial catches were relatively low prior to 1986; however, these catches increased substantially and have remained at higher levels throughout the 1990s, with nearly all of the production coming from the northeastern U.S. coast. The U.S. landings from the Caribbean increased in 1995 to make up over 14% of the total U.S. harvest of albacore, but have since remained below 4% of the total. Nominal catch rates from U.S. pelagic longline logbook reports are shown in Figure 2.4. Estimated total catches of albacore were 248 MT in 2008, a decrease of 284 MT from 2007 (Table 2.4-ALB).

<b>Table 2.4-ALB. Annual Landings (MT) of Albacore Tuna from 2004 to 2008</b>						
Area	Gear	2004	2005	2006	2007	2008
NW Atlantic	Longline	<b>106.6</b>	<b>88.9</b>	<b>84.8</b>	<b>109.9</b>	<b>107.2</b>
	Gillnet	<b>4.9</b>	<b>6.0</b>	<b>2.1</b>	<b>1.0</b>	<b>2.1</b>
	Handline	<b>6.1</b>	<b>3.0</b>	<b>2.6</b>	<b>5.4</b>	<b>0.2</b>
	Trawl	<b>2.7</b>	<b>1.7</b>	<b>1.1</b>	<b>0.3</b>	<b>0.01</b>
	Trap	<b>6.3</b>	<b>1.7</b>	<b>0.5</b>	<b>0.4</b>	<b>0.005</b>
	Troll	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.2</b>	<b>0.2</b>
	Rod and Reel*	<b>500.5</b>	<b>356.0</b>	<b>284.2</b>	<b>393.6</b>	<b>125.2</b>
	Unclassified	<b>3.6</b>	<b>9.9</b>	<b>5.6</b>	<b>4.2</b>	<b>2.0</b>
Gulf of Mexico	Longline	<b>9.9</b>	<b>6.9</b>	<b>7.6</b>	<b>15.4</b>	<b>10.2</b>
	Handline	<b>0.0</b>	<b>0.1</b>	<b>0.07</b>	<b>0.0</b>	<b>0.0</b>
Caribbean	Longline	<b>3.2</b>	<b>12.1</b>	<b>10.5</b>	<b>1.2</b>	<b>0.4</b>
	Gillnet	<b>0.005</b>	<b>0.002</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
	Handline	<b>2.1</b>	<b>1.1</b>	<b>0.4</b>	<b>0.2</b>	<b>0.4</b>
NC Area 94A	Longline	<b>0.2</b>	<b>0.6</b>	<b>0.03</b>	<b>0.3</b>	<b>0.08</b>
SW Atlantic	Longline	<b>0.5</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>TOTAL</b>		<b>646.6</b>	<b>488.0</b>	<b>399.5</b>	<b>532.1</b>	<b>248.1</b>

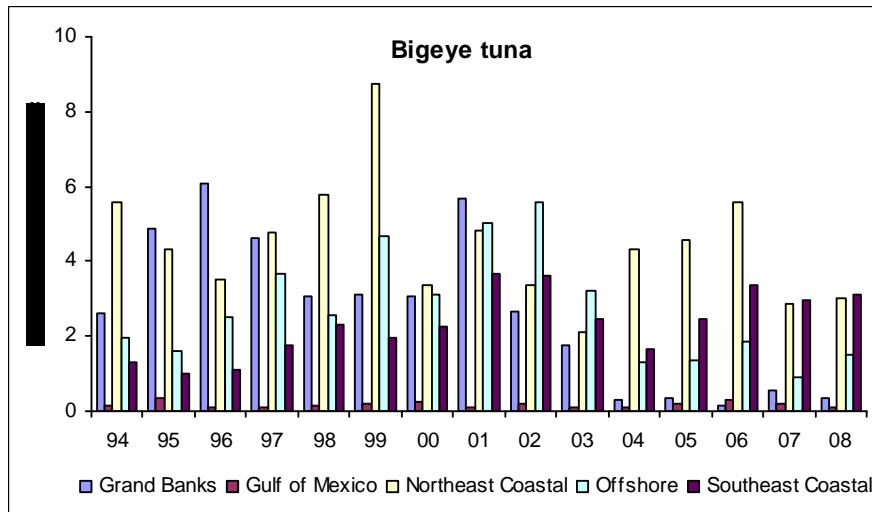
\* Rod and Reel catches and landings represent estimates of landings and dead discards based on statistical surveys of the U.S. recreational harvesting sector.



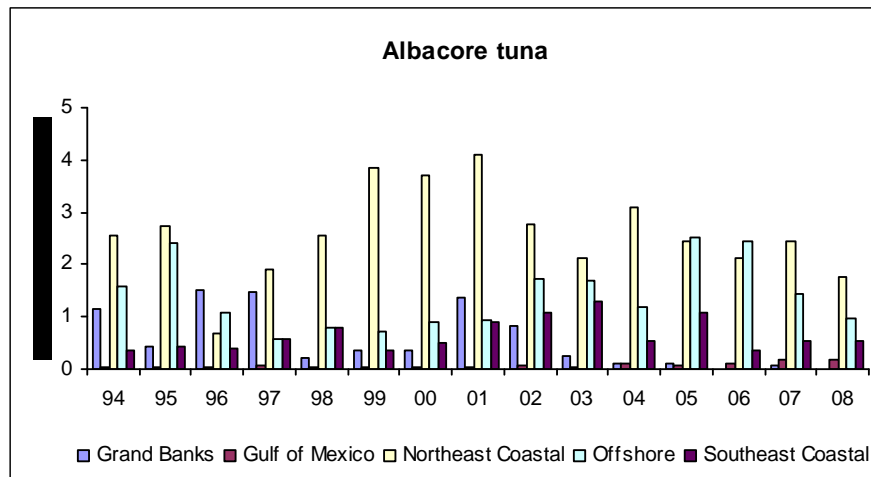
**Figure 2.1 – YFT.** Nominal catch rates for YFT in U.S. pelagic longline logbook reports



**Figure 2.2 – SKJ.** Nominal catch rates for SKJ in U.S. pelagic longline logbook reports.



**Figure 2.3 – BET.** Nominal catch rates for BET in U.S. pelagic longline logbook reports.



**Figure 2.4 – ALB.** Nominal catch rates for ALB in U.S. pelagic longline logbook reports.

*Bluefin Tuna.* The U.S. bluefin fishery continues to be regulated by quotas, seasons, gear restrictions, limits on catches per trip, and size limits. To varying degrees, these regulations are designed to manage total U.S. landings to conform to ICCAT recommendations. U.S. 2008 provisional estimated landings and dead discards from the northwest Atlantic (including the Gulf of Mexico) were approximately 764 MT and 173 MT, respectively. Those estimated landings and dead discards represent an increase of approximately 88 MT from the 2007 estimates, and are the highest since the 2004 estimates. The 2008 landings by gear were: 30 MT by harpoon, 658 MT by rod and reel, and 248 MT by longline (including discards) of which 112 MT were from the Gulf of Mexico.

In response to 1992 regulations limiting the allowable catch of small fish by U.S. fishermen, in conformity with ICCAT agreements, enhanced monitoring of the rod and reel fishery was implemented in 1993 for the purpose of providing near real-time advice on catch levels by this fishery. This monitoring activity has continued and has included estimation of catches by finer scale size categories than reported above. The preliminary estimates for the 2008 rod and reel fishery off the northeastern U.S. (including the North Carolina winter fishery) for landings in several size categories were 59 fish < 66 cm, 3030 fish 66-114 cm, 6253 fish 115-144 cm and 982 fish 145-177 cm (an estimated 0.2, 61, 291, and 79 MT, respectively). Note that additional rod and reel landings of bluefin >177 cm SFL, monitored through a sales reporting system, are included in Table 2.5-BFT.

<b>Table 2.5-BFT. Annual Landings (MT) of Bluefin Tuna from 2004 to 2008</b>						
Area	Gear	2004	2005	2006	2007	2008
NW Atlantic	Longline**	<b>63.6</b>	<b>72.7</b>	<b>104.4</b>	<b>70.7</b>	<b>124.7</b>
	Handline	<b>1.5</b>	<b>2.3</b>	<b>0.3</b>	<b>0.0</b>	<b>0.6</b>
	Harpoon	<b>41.2</b>	<b>31.5</b>	<b>30.3</b>	<b>22.5</b>	<b>30.2</b>
	Purse seine	<b>31.8</b>	<b>178.3</b>	<b>3.6</b>	<b>27.9</b>	<b>0.0</b>
	* Rod and reel (>145 cm LJFL)	<b>348.0</b>	<b>170.4</b>	<b>217.2</b>	<b>235.4</b>	<b>305.7</b>
	* Rod and reel (<145 cm LJFL)	<b>370.2</b>	<b>254.4</b>	<b>158.2</b>	<b>398.6</b>	<b>352.2</b>
	Unclassified	<b>0.2</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.3</b>
Gulf of Mexico	Longline**	<b>102.8</b>	<b>118.5</b>	<b>88.1</b>	<b>81.2</b>	<b>111.6</b>
	Rod and Reel	<b>0.0</b>	<b>0.0</b>	<b>0.6</b>	<b>0.0</b>	<b>0.0</b>
NC Area 94A	Longline**	<b>13.7</b>	<b>20.3</b>	<b>12.1</b>	<b>12.4</b>	<b>11.5</b>
<b>TOTAL</b>		<b>973.0</b>	<b>848.4</b>	<b>614.8</b>	<b>848.7</b>	<b>936.7</b>

\* Rod and Reel catches and landings represent estimates of landings and dead discards when available based on statistical surveys of the U.S. recreational harvesting sector.

\*\* includes *landings* and *estimated discards* from scientific observer and logbook sampling programs

### 2.1.3 Swordfish Fishery Statistics

For 2008, the provisional estimate of U.S. vessel landings and dead discards of swordfish was 2,530 MT (Table 2.6-SWO). This estimate represents a decrease from the 2007 estimate of 2,682.8 MT. The provisional landings, excluding discard estimates, by ICCAT area for 2008 (compared to 2007) were: 386 MT (404.8 MT) from the Gulf of Mexico (Area 91); 1,774 MT (1,696.9 MT) from the northwest Atlantic (Area 92); 58 MT (26.9 MT) from the Caribbean Sea (Area 93); and 311 MT (333.9 MT) from the North Central Atlantic (Area 94A).

U.S. swordfish landings are monitored in-season from reports submitted by dealers, vessel owners and captains, NMFS port agents, and mandatory daily logbook reports submitted by U.S. commercial vessels permitted to fish for swordfish. The US swordfish longline fishery is also being monitored via a scientific observer sampling program, instituted in 1992. Approximately 8% of the longline fleet-wide fishing effort is randomly selected for observation during the fishing year. The observer sampling data, in combination with logbook reported effort levels, support estimates of approximately 15,421 fish discarded dead in 2008. For the North Atlantic, the



estimated tonnage discarded dead in 2008 is 199.3 MT, of which 183.4 is estimated due to longline gear. Overall, the estimates of dead discarded catch decreased by about 20.9 MT compared to the 2007 levels, which corresponded to approximately 8% of the commercially landed catch.

Total weight of swordfish sampled for sizing U.S. commercial landings by longline, trawl, and handline was 2,235 MT, 7 MT, and 73 MT in 2008. The weight of sampled swordfish landings in 2008 were 95%, 91%, and 86% of the U.S. total reported annual landings of swordfish for longline, trawl, and handline, respectively. Again, incorporation of late reports into the estimated 2008 landings figure will likely result in changes in the sampled fraction of the catch. Recent estimates of rod and reel landings of swordfish based on surveys of recreational anglers, range from about 5-76 MT per year within the period 1996-2008.

<b>Table 2.6-SWO. Annual Landings (MT) of Swordfish from 2004 to 2008</b>						
Area	Gear	2004	2005	2006	2007	2008
NW Atlantic	Longline**	<b>1,169.7</b>	<b>1,096.2</b>	<b>1,165.2</b>	<b>1,649.6</b>	<b>1,622.5</b>
	Gillnet	<b>0.05</b>	<b>0.0</b>	<b>0.0</b>	<b>0.2</b>	<b>0.0</b>
	Handline	<b>18.7</b>	<b>34.4</b>	<b>32.5</b>	<b>125.2</b>	<b>83.2</b>
	Harpoon	<b>0.5</b>	<b>0.0</b>	<b>0.3</b>	<b>0.0</b>	<b>0.0</b>
	Trawl	<b>8.3</b>	<b>8.2</b>	<b>3.5</b>	<b>6.5</b>	<b>7.6</b>
	Rod and Reel*	<b>24.3</b>	<b>53.1</b>	<b>50.6</b>	<b>65.9</b>	<b>56.7</b>
	Unclassified	<b>0.0</b>	<b>0.5</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>
	Unclassified discards	<b>3.9</b>	<b>4.2</b>	<b>5.1</b>	<b>5.5</b>	<b>4.1</b>
Gulf of Mexico	Longline**	<b>453.0</b>	<b>480.9</b>	<b>328.1</b>	<b>457.7</b>	<b>361.6</b>
	Handline	<b>4.0</b>	<b>0.3</b>	<b>0.1</b>	<b>0.2</b>	<b>1.2</b>
	Rod and Reel*	<b>0.5</b>	<b>1.5</b>	<b>2.1</b>	<b>2.3</b>	<b>19.0</b>
	Unclassified	<b>0.0</b>	<b>0.2</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
	Unclassified discards	<b>0.03</b>	<b>3.9</b>	<b>2.7</b>	<b>5.5</b>	<b>4.6</b>
Caribbean	Longline**	<b>295.9</b>	<b>143.5</b>	<b>88.9</b>	<b>27.8</b>	<b>57.9</b>
	Rod and Reel*	<b>0.4</b>	<b>6.6</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
	Handline	<b>0.006</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
	Unclassified discards	<b>0.08</b>	<b>0.7</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
NC Area 94A	Longline**	<b>599.9</b>	<b>552.2</b>	<b>378.6</b>	<b>338.9</b>	<b>311.6</b>
	Unclassified discards	<b>0.1</b>	<b>1.2</b>	<b>0.0</b>	<b>0.5</b>	<b>0.0</b>
SW Atlantic	Longline**	<b>15.7</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>TOTAL</b>		<b>2,595.1</b>	<b>2,387.6</b>	<b>2,057.9</b>	<b>2,682.8</b>	<b>2,530.3</b>

\* Rod and Reel catches and landings represent estimates of landings and dead discards when available based on statistical surveys of the U.S. recreational harvesting sector.

\*\* includes *landings* and *estimated discards* from scientific observer and logbook sampling programs

#### 2.1.4 *Marlins and Sailfish Fishery Statistics*

Blue marlin, white marlin, and sailfish are landed by U.S. recreational rod and reel fishermen and are a bycatch of the U.S. commercial tuna and swordfish longline fisheries. The U.S. Fisheries Management Plan (FMP) for Atlantic Billfishes was implemented in October, 1988. The Plan allows billfish that are caught by recreational gear (rod and reel) to be landed only if the fish is larger than the minimum size specified for each species covered by the FMP. Recreational landings of each billfish species can be estimated using: (a) the Southeast Fisheries Science Center (SEFSC) Recreational Billfish Survey (RBS) which provides the number of billfish caught (and landed) during tournaments held along the southeastern U.S. coast (south of 35° N latitude), in the Gulf of Mexico, and U.S. Caribbean Sea regions (i.e., U.S. Virgin Islands and Puerto Rico); (b) the Large Pelagics Recreational Survey (LPS) conducted by the National Marine Fisheries Service (NMFS) which provides estimates of recreational harvest of highly migratory species (including billfish), from waters along the northeastern U.S. (north of 35° N latitude); (c) Marine Recreational Fishery Statistics Survey (MRFSS); (d) a Headboat survey (large multi-party charter boats); and (e) a coastal sport fishing survey of the Texas recreational fishery (TPW). In addition, recreational catch statistics by self-reported catch cards also document billfish landings in some states.

The estimates of 2008 U.S. rod and reel landings for these billfish species, combining the geographical areas of the Gulf of Mexico (Area 91), the northwestern Atlantic Ocean west of the 60° W longitude (Area 92), and the Caribbean Sea (Area 93) are: 9.0 MT for blue marlin, 1.5 MT for white marlin, and 0.0 MT for sailfish. The estimates for 2007 were: 10 MT for blue marlin, 0.9 MT for white marlin, and 0.03 MT for sailfish.

In addition to restrictions on U.S. recreational harvest, the Fisheries Management Plan also imposed regulations on commercial fisheries by prohibiting retention and sale of the three species. For this reason, there are no US commercial landings for any of the three Atlantic species. However, estimates of dead discards in the US longline fleet are made using the data from mandatory pelagic logbooks and scientific observer data collected on this fleet. The procedure for estimating bycatch of blue marlin, white marlin, and sailfish was detailed in SCRS/96/97-Revised. This procedure was implemented for estimating bycatch mortalities from the US longline fleet and all other commercial gears combined. Revisions to historical landings of billfish previously reported to ICCAT were based on review of the estimates conducted at the 1996 ICCAT Billfish Workshop held in Miami, FL (USA). Estimates of the billfish bycatch discarded dead in the US commercial longline and other commercial 2008 were 37.6 MT for blue marlin, 9.7 MT for white marlin, and 9.4 MT for sailfish. The estimated 2007 U.S. discarded dead bycatch was 42.1 MT, 7.4 MT, and 7.7 MT, respectively for the three species.

#### 2.1.5 *Shark Fishery Statistics*

The U.S. Federal Fisheries Management Plan (FMP) implemented in 1993 (NMFS 1993) identified three management groups: large coastal sharks, small coastal sharks, and pelagic sharks. The pelagic complex included ten species: shortfin mako (*Isurus oxyrinchus*), longfin mako (*Isurus paucus*), porbeagle (*Lamna nasus*), thresher (*Alopias vulpinus*), bigeye thresher (*Alopias superciliosus*), blue (*Prionace glauca*), oceanic whitetip (*Carcharhinus longimanus*), sevengill (*Heptranchias perlo*), sixgill (*Hexanchus griseus*), and bigeye sixgill (*Hexanchus vitulus*). The 1993 FMP classified the status of pelagic sharks as unknown because no stock assessment had been conducted for this complex. The Maximum Sustainable Yield (MSY) for pelagic sharks was set at 1,560 mt dressed weight (dw), which was the 1986-1991 commercial landings average for this group. In 1997, as a result of indications that the abundance of Atlantic sharks had declined, commercial quotas for large coastal, small coastal, and pelagic sharks were reduced. The quota for pelagic sharks was set at 580 mt. In 1999, the U.S. FMP for Atlantic Tunas, Swordfish, and Sharks (NMFS 1999) proposed the following measures affecting pelagic sharks: 1) a reduction in the recreational bag limit to 1 Atlantic shark per vessel per trip, with a minimum size of 137 cm fork length for all sharks, 2) an increase in the annual commercial quota for pelagic sharks to 853 mt dw, apportioned between porbeagle (92 mt), blue sharks (273 mt dw), and other pelagic sharks (488 mt dw), with the pelagic shark quota being reduced by any overharvest in the blue shark quota, and 3) making the bigeye sixgill, sixgill, sevengill, bigeye thresher, and longfin mako sharks prohibited species that cannot be retained. Regulations on prohibited species went into effect in 2000, whereas those on pelagic shark quotas were enacted in 2001. Presently, the commercial quotas for pelagic sharks are 273 mt dw (blue sharks), 1.7 mt dw (porbeagles), and 488 mt dw (pelagic sharks other than porbeagle or blue).

Landings of sharks by U.S. longline fishermen holding permits to land and sell swordfish caught in the Atlantic and dead discards of sharks in the US longline fleet targeting tunas and tuna-like species are monitored and reported to ICCAT. There are also additional catches and landings of Atlantic pelagic sharks across the range of US fleets that harvest them, including recreational fisheries, that are updated annually. These total catches are

updated herein through 2008 (data for 2008 are preliminary and subject to change). Commercial landings of pelagic sharks in weight steadily increased from the early 1980s, peaked in 2004, and declined in 2005-2008 (Appendix 2 Table 2.6a-SHK). Recreational catches in numbers estimated from the MRFSS survey during 1981-2008 peaked to a maximum of 93,000 fish in 1985, and showed a declining trend since that year, fluctuating between about 42,600 fish in 1986 to about 3,800 fish in 2001. Catches increased in 2006 and 2007, mostly as a result of an unusually high estimate for thresher sharks, but reached a minimum in the last year of data, 2008 (Appendix 2 Table 2.6a-SHK). Estimates of pelagic longline dead discards also fluctuated between 1987 and 2008, but generally declined from a maximum of 30,500 fish in 1993 to a minimum of about 1,200 fish in 2003. Total catches ranged from about 12,600 fish in 1981 (no commercial landings or discard estimates were available for that year) to about 95,000 fish in 1985, as a result of the peak in recreational landings that year.

Blue shark (*Prionace glauca*) commercial landings were generally very low (Appendix 2 Table 2.6b-SHK). Recreational catches in numbers ranged from 0 fish in several years to over 20,000 fish in 1987. Pelagic longline discards reached 29,000 fish in 1993, but otherwise oscillated between a minimum of about 400 fish in 2006 to a maximum of about 19,000 fish in 1996. In general, there was a decreasing trend in estimated dead discards of blue sharks, but the 2007 and 2008 values showed an increase to pre-2002 levels (Appendix 2 Table 2.6b-SHK). The trends in recreational catches and dead discards were very similar from 1992 to 1997. Total catches ranged from 0 fish in 1982 (a year in which no commercial or recreational landings were reported) to about 43,500 fish in 1993, the year in which dead discard estimates peaked (Appendix 2 Table 2.6b-SHK).

Shortfin mako (*Isurus oxyrinchus*) commercial landings never exceeded 11,000 fish according to available estimates and assumptions about average weights (Appendix 2 Table 2.6c-SHK). Most of the landings were attributable to the recreational fishery, whose estimated catches in numbers peaked in 1985 to about 80,000 fish, and ranged from less than 1,400 fish to over 31,000 fish in the remaining years. Pelagic longline discards of shortfin makos were negligible since the meat of this species is highly valued. Total catches ranged from about 3,400 fish in 1991 to almost 80,000 fish in 1985, when recreational catches peaked (Appendix 2 Table 2.6c-SHK).

Catches of other pelagic species, such as longfin mako (*Isurus paucus*), oceanic whitetip shark (*Carcharhinus longimanus*), porbeagle (*Lamna nasus*), bigeye thresher (*Alopias superciliosus*), and thresher shark (*Alopias vulpinus*) were very small. Total catches of thresher sharks peaked at about 5,200-5,600 fish in 1984, 1999 and 2007, and showed a high peak in 2006, as a result of an unusually high estimate of recreationally caught thresher sharks. A maximum of about 1,500 fish was estimated to have been landed by the commercial fishery in 1997, the maximum estimate of dead discards from the pelagic longline fishery was about 700 fish in 1989, and never exceeded about 630 fish thereafter. Total catches of longfin makos in any given year were under 450 fish. Very few longfin makos were landed by the commercial fishery, there were no reported catches from recreational fisheries, and only some fish were reported discarded dead from 1992 to 1995. Very few oceanic whitetip sharks were landed by the commercial fishery, except for two peaks of about 1,250 and 1,800 fish in 1983 and 1998, respectively, but otherwise total catches never exceeded 450 fish. Total reported catches of porbeagle, and especially bigeye thresher, were also very low.

## 2.2. Research Activities

### 2.2.1 Bluefin Tuna Research

As part of its commitment to the Bluefin Year Program, research supported by the United States has concentrated on ichthyoplankton sampling, growth and reproductive biology, methods to evaluate hypotheses about mixing and movement patterns, spawning area fidelity, stock structure investigations and population modeling analyses.

Ichthyoplankton surveys in the Gulf of Mexico during the bluefin spawning season continued in 2008 and 2009. Data resulting from these surveys, which began in 1977, are used to develop a fishery-independent abundance index of spawning for western Atlantic bluefin tuna. This index has continued to provide one measure of bluefin abundance that is used in the assessments of the status of the resource. In addition to this survey which occurs over a fixed spatial grid, adaptive sampling was carried out in 2008 to better understand larval distribution in relation to oceanographic features. Neuston and bongo samples were taken across the Loop Current and adjacent mesoscale structures to sample larval bluefin tuna during the time period May 1-8, 2008. The selection of sampling stations was based upon daily satellite analysis (SST and ocean color) with transects being positioned in response to rapidly moving frontal boundaries. Transects were selected to provide high resolution physical and biological mapping of larval scombrids in relation to rapidly changing current flows and gyre movement.

Scientists from the Virginia Institute of Marine Science (VIMS) continue to investigate genetic markers derived from young bluefin tuna. Slight, but significant differences exist between young-of-the-year caught in the Mediterranean Sea and the Gulf of Mexico for several nuclear microsatellite loci and the mitochondrial control region. Assignment testing using these loci is not very conclusive, resulting in correct assignments to samples of known origin only about 75% of the time. Other work at VIMS has demonstrated very significant differences in non-metabolized organochlorine pollutants between eastern and western bluefin. These can be used to determine where a fish has gained its biomass. About 60% of young school BFT from the U.S. mid-Atlantic have signatures characteristic of the Med, consistent with the otolith chemistry work discussed below.

Scientists from the University of Maryland initiated a study to age bluefin tuna sampled from the Gulf of Mexico and elsewhere. Part of this research was conducted jointly with Canadian scientists who have developed validated age readings. A new growth model was fit for recent year-classes (after 1970) for western captured, western-origin Atlantic bluefin tuna, which results in expected lengths that differ substantially from the model adopted by SCRS for fish ages 12 and older (SCRS/2008/084). Future priority on age determinations may be given to samples from the Mediterranean population and historical samples from the Gulf of Mexico population.

Scientists from Texas A & M University and the University of Maryland completed an initial analysis on stock structure of bluefin tuna using otolith chemistry particularly focusing on large bluefin from the Gulf of Mexico and the Mediterranean Sea. This research is greatly facilitated through continued collaboration with Canadian, Italian, and Spanish scientists. Results from stable isotope analysis of otoliths provide strong evidence for natal homing by two populations of Atlantic bluefin tuna each with discrete centers of origin (Mediterranean Sea and Western Atlantic). On the other hand, high rates of mixing occurred for juveniles (age 2-5 years) collected in US waters, where a little over 50% of individuals within those age classes are of Mediterranean Sea origin. With continued support and directed sampling, it should be feasible to use this type of information as input in future stock assessments.

Scientists at Stanford University and the TAG-A-Giant research team continued to deploy electronic tags in the western Atlantic in 2008 (n=67 deployments). Three additional bluefin were fitted with pop-up satellite archival tags in the Mediterranean Sea off the coast of France. These efforts brought the total number of electronic tags deployed on Atlantic bluefin by the TAG team to nearly 1000. Tagging in the Gulf of St. Lawrence revealed a strong linkage between fish there and the Gulf of Mexico spawning grounds, corroborating findings from otolith studies. In collaboration with scientists from the University of British Columbia, work continues on a new stock assessment model of eastern and western Atlantic bluefin tuna that includes different growth, movement, maturity and natural mortality parameters for each stock, season and age group.

Researchers at the Large Pelagics Research Center, UNH conducted biological sampling for maturity schedules and reproduction, age and growth, energetics and forage relationships. In 2008 the joint LPRC-DFO program included 37 PSAT deployments on adult bluefin in four regions. Twenty-one juvenile bluefin were released with mini PSATs off Cape Cod, MA and a collaborative archival tagging program continued with AZTI Tecnicalia. Other work includes development of an individual-based, coupled physical-biological model designed to represent bluefin population dynamics, which will facilitate the tracking of individual growth, maturation, reproduction and mortality, including species-specific migratory and spawning behaviors. LPRC also successfully conducted several multibeam sonar trials and (imaged individual fish of 60-85 kilos in schools) The sonar trials were supplemented with aerial documentation.

Scientists at the National Marine Fisheries Service continued to work with Scientists from the University of British Columbia to further test the efficacy of a formulation of the SCRS two-stock VPAs that estimates the degree of intermixing between two stocks based on conventional tagging data, electronic tagging data, and new data on the proportion of the catch that comes from each stock (as deduced from genetic and otolith microconstituent analyses). In collaboration with other national scientists, initial runs of this new model were performed during the 2008 stock assessment meeting.

As it did in 2007, the National Marine Fisheries Service expanded the observer coverage of the pelagic longline fishery in the Gulf of Mexico from March 9<sup>th</sup> through mid June 9<sup>th</sup>, 2008. Approximately, 75% of known pelagic longline fishing trips carried a scientific observer on board. Biological samples were taken from boarded bluefin tuna including otoliths, gonads, and muscle. Contracts were awarded to conduct research on bluefin stock structure, growth, gender determination and reproduction. The enhanced Gulf of Mexico observer coverage was also implemented from March 30<sup>th</sup> through June 12<sup>th</sup>, 2009, where over 80% of longline trips were observed.

The National Marine Fisheries Service has been developing new technologies and testing changes in fishing

practices to reduce the bycatch mortality of bluefin tuna in the directed yellowfin tuna longline fishery in the Gulf of Mexico. During 2008, 72 experimental longline sets were deployed with two types of circular hooks: 1) a 16/0 circular hook with no offset (4.0 mm steel wire) commonly used by the yellowfin tuna fleet operating in the area, and 2) a 'weaker' 16/0 circular hook with no offset made of 3.65 mm steel wire (same material used for 15/0 circular hooks). Although the results are considered preliminary and the sample sizes were small, researchers conducting the experiment found that large bluefin tuna were able to straighten the weak hooks and escape, while the same hooks retained yellowfin tuna. Based on these initial results, an experimental cruise was planned and conducted during the 2009 summer season.

### 2.2.2 Swordfish Research

Scientists from the NOAA SEFSC, the University of Miami and Nova Southeastern University developed procedures for sampling genomic DNA from live billfishes and swordfish. They examined the collection of surface mucous and compared it to muscle tissue samples from four species, including Atlantic swordfish (*Xiphias gladius*). Purified DNA from mucous was comparable to muscle and was suitable for many common genetic studies. These nondestructive and less invasive procedures will likely promote increased survival of released specimens.

Studies are also ongoing by scientists at Texas A&M University at Galveston and the University of South Carolina FISHTEC Genetics laboratory to determine the genetic population structure of Atlantic swordfish. These studies include examination of nuclear and mitochondrial DNA as well as DNA microsatellites. The results corroborate the existing three stock hypothesis used by ICCAT (N-ATL, S-ATL, MED). However, the authors also suggest that their techniques are suitable to examine the temporal and spatial scales of mixing across management boundaries, given the availability of sufficient samples.

A three year collaboration with the Canadian Department of Fisheries and Oceans, the Canadian swordfish harpoon fleet, and the University of New Hampshire began in 2005 and concentrated tagging effort on fish in the Georges Bank area. Recently, tagging effort has shifted to the Grand Banks off Newfoundland. To date, results of tag deployments suggest a more complex stock structure than was previously understood and indicate that swordfish appear to exhibit fidelity to their feeding sites.

### 2.2.3 Tropical Tunas Research

U.S. scientists participated in the ICCAT SCRS yellowfin and skipjack stock assessment sessions held in Florianopolis, Brazil, July 21-29, 2008. U.S. scientists also participated in the Tropical Species Group meeting (Madrid, Spain Sept. 24-26, 2008) where the recent work of the Group in evaluating alternative measures to protect juvenile tropical tunas was continued.

In 2008, U.S. scientists presented several papers to the SCRS consisting of indices of abundance and length-frequencies of yellowfin and skipjack tuna from U.S. fisheries. U.S. scientists have also pursued research to develop demographically-based prior distributions for the intrinsic rate of population increase for tropical tunas. These prior distributions were essential input into Bayesian and non-Bayesian surplus production modeling conducted during the 2008 skipjack tuna assessment.

U.S. scientists from the University of Miami's Rosenstiel School of Marine and Atmospheric Science collaborated with EC scientists on an EU-funded FEMS project regarding management strategy evaluations related to tropical tuna fisheries. U.S. scientists have continued to conduct cooperative research with scientists from Mexico, combining observer data collected from each nation's longline fleets in the Gulf of Mexico, pursuing the development of indices of abundance for species of concern to ICCAT as well as descriptive analyses of that fishery. U.S. and Mexican scientists collaboratively calculated abundance indices for the 2008 yellowfin tuna stock assessment using the combined database. U.S. scientists also collaborated with EU scientists to calculate skipjack abundance indices from the Azorean baitboat fishery as well as in the estimation of potential trends in catchability in the European purse seine fleet.

### 2.2.4 Mackerels and Small Tunas Research

*King mackerel.* A domestic stock assessment of king mackerel in the U.S. Gulf of Mexico and South Atlantic was conducted in 2008. Many new or revised data inputs were submitted to the assessment process, and had important implications. Scientists from the National Marine Fisheries Service (NMFS) Panama City laboratory provided new estimates of batch fecundity and spawning frequency for king mackerel (*Scomberomorus cavalla*)

in U.S. waters. Their batch fecundity estimates indicated that king mackerel have greater reproductive potential than had previously been reported.

Scientists from NMFS/SEFSC Miami and the SEFSC Cooperative Tagging Center reviewed and summarized the available mark-recapture data for king mackerel as of 2008. The data supported the assumption of two main migratory groups, one off the U.S. South Atlantic coast and one in the Gulf of Mexico. Also, tag recaptures corroborated that the South Florida east coast and Florida Keys are an area of mixing for both stocks, particularly during the winter months. However, the data also showed that not all the population migrates during the winter months, at least in the Gulf of Mexico.

Additional work regarding stock structure was also reported in 2008 by scientists from the University of West Florida and NMFS SEFSC Panama City. They used otolith shape parameters to estimate the stock identity of king mackerel harvested in three regions around southern Florida in winter 2006/07. Their results indicated a longitudinal gradient existed in Atlantic stock contribution to winter mixed stock fisheries with highest Atlantic contribution in southeastern Florida and lowest in southwestern Florida.

Scientists from NMFS SEFSC Miami and Panama City laboratories provided updated sex and stock-specific von Bertalanffy growth models for king mackerel using a model that accounted for truncation in the length-at-age samples due to minimum size restrictions.

Scientists from NMFS SEFSC and the Instituto Nacional de Pesca in Mexico also collaborated to provide historical estimates of catch, effort and size-composition from Mexican king mackerel fisheries. These data were considered critical by the independent reviewers of the king mackerel assessment, who emphasized that such collaboration should continue.

In addition, many updated catch rate/abundance series were provided in 2008 from directed fisheries, bycatch fisheries, and fishery independent sources.

*Spanish mackerel.* A domestic stock assessment of Spanish mackerel (*Scomberomorus maculatus*) in the U.S. South Atlantic was conducted in 2008. New and/or revised data inputs were submitted to the assessment process. A summary follows.

Scientists from NMFS Panama City laboratory provided a review of Spanish mackerel age compositions data, including an overview of the temporal and spatial distributions, as well as distributions by fishery and gear for samples collected in Atlantic waters.

Scientists from the Florida Fish and Wildlife Conservation Commission, North Carolina Division of Marine Fisheries and NMFS SEFSC-Beaufort Laboratory provided new estimate of length composition and condition of released Spanish mackerel from at-sea headboat observer surveys in the U.S. South Atlantic. This report provided valuable information on the size and mortality of discarded fish from the recreational fishery, which has not been previously available.

In addition, many updated catch rate/abundance series were provided in 2008 from directed fisheries, bycatch fisheries, and fishery independent sources.

#### *2.2.5 Shark Research*

Following a data preparatory meeting held in 2007, The ICCAT Shark Species Group conducted a stock assessment of pelagic sharks in Madrid, Spain, in September 2008. In addition to contributing 7 working documents to the meeting, scientists from the U.S. delegation (NMFS SEFSC and University of Miami's RSMAS) were centrally involved in the assessments and completion of the final report). The ICCAT Shark Species Group also met jointly with the International Council for the Exploration of the Sea (ICES) Working Group on Elasmobranch Fishes in Copenhagen, Denmark, in June 2009 for an assessment of Atlantic porbeagle shark. Scientists from the U.S. delegation (NMFS SEFSC and University of Miami's RSMAS) also were centrally involved in the assessments and completion of the final report.

A cooperative shark research project between Brazil (Universidade Federal Rural de Pernambuco) and the U.S. (NMFS SEFSC Panama City Laboratory and the University of Florida's Florida Museum of Natural History) was initiated in 2007. The main goal of this cooperative project is to conduct simultaneous research on pelagic sharks in the North and South Atlantic Ocean. Central to conducting the research is development of fisheries

research capacity in Brazil through graduate student training and of stronger scientific cooperation between Brazil and the U.S. Electronic equipment (hook-timer recorders [HTR] and temperature and depth recorders [TDRs]) was sent from the U.S. to Brazil for deployment aboard commercial longline fishing vessels to investigate preferential feeding times of pelagic sharks and associated fishing depths and temperatures for potential use in habitat-based models and estimation of catchability. To date, one fishing survey has been conducted, with 17 sets on a commercial pelagic longline fishing vessel during April and May 2009; each set made use of 300 HTRs. In this first survey only HTRs were used; the deployment of the TDRs is scheduled for the next survey. A total of 772 individuals, represented by 22 species were caught. The target species, swordfish (*Xiphias gladius*), was the most commonly fish caught, (n = 297, 38.5%). Sharks (*Carcharhinus longimanus* (n = 7), *Prionace glauca* (n = 23), *Sphyrna* spp. (n = 5), *Isurus oxyrinchus* (n = 4), *Alopias* spp. (n = 3), *Carcharhinus signatus* (n = 2), and *Pseudocarcharias kamoharai* (n = 7)) represented 6.6% of the total catch. A total of 415 activated HTRs were recovered with fish (or identifiable fish parts) on the leader. Time at hooking varied among species. Almost all blue sharks were hooked at night (96%) with only one animal hooked during daylight hours. All shortfin makos caught on leaders with HTRs were caught at night, as well as the crocodile sharks. Thresher and hammerhead sharks showed no clear preference between daylight and nighttime feeding. Only one oceanic whitetip shark was caught during the night, and this animal was hooked just prior to sunrise. Future work will consist of another 15 surveys in 2009 and 2010 to collect fishery TDR and HTR data. Additionally, the use of pop-up satellite archival tags (PSATs) on blue, shortfin mako, and other pelagic sharks is intended to provide critical knowledge on daily horizontal and vertical movement patterns, depth distribution, and effects of oceanographic conditions on the vulnerability of these pelagic sharks to pelagic longline fishing gear. Six pop-off satellite archival tags have been deployed to date (2 oceanic whitetip sharks, 3 bigeye threshers and 1 longfin mako) in U.S. Atlantic waters. Archival satellite pop-up tags were also attached to three female blue sharks and two female shortfin mako sharks by pelagic longline fishing vessels in the Southwestern Atlantic Ocean. Data collected by these tags are still being analyzed; however, preliminary findings will be presented at regional and national conferences.

As part of the training component of this cooperative Brazil-US research project, an international course entitled: "A practical course in demographic methods and ecological risk assessment using spreadsheets" was taught by Dr. Enric Cortés at the Florida Museum of Natural History, University of Florida, Gainesville, July 13-17, 2009. The course included students mostly from Brazil, but also from Argentina, Colombia, Venezuela, Uruguay, Portugal, Spain, and the USA.

#### 2.2.7. Billfish Research

The NMFS SEFSC once again played a substantial role in the ICCAT Enhanced Research Program for Billfish in 2009, with US scientists acting as general coordinator (Dr. David Die) and coordinator for the western Atlantic Ocean (Dr. Eric Prince). Major accomplishments in the western Atlantic in 2008 were documented in SCRS/08/171. Highlights include 11 at-sea sampling with observers on Venezuelan industrial longline vessels through September 2008. Of the trips accomplished, 4 observer trips were on Korean type vessels fishing under the Venezuelan flag. Most of these vessels are based out of Cumana and target tuna, swordfish, or both at the same time. Biological sampling of swordfish, Istiophorids, and yellowfin tuna for reproductive and age determination studies, as well as genetics research were continued during the 2008 sampling season. These included 536 blue marlin, 588 white marlin, and over 1,000 sailfish and spearfish.. Shore-based sampling of billfish landings for size frequency data, as well as tournament sampling was obtained from Venezuela, Grenada, U.S. Virgin Islands, Bermuda, Barbados, and Turks and Caicos Islands. During 2008, program participants in Venezuela, Grenada, and Barbados continued to assist in obtaining information on tag-recaptured billfish, as well as numerous sharks, in the western Atlantic Ocean. A total of 59 tags were recovered from billfish and sharks and were submitted to the Program Coordinator. Age, growth, and reproductive samples from several very large blue marlin (over 1000 lbs) were obtained during 2008.

A new international collaboration was formalized by the NOVA Southeastern University (Dr. Mahmood Shivji) on billfish genetics in 2008. Collaborators include Southeast Fisheries Science Center, Venezuela (Instituto Oceanografico, Universidad de Oriente), Uruguay (Recursos Pelagicos, Direccion Nacional de Recursos Acuaticos), and Brazil (Universidade Federal Rural de Pernambuco). One of the primary goals is to develop accurate estimates of white marlin/round scale spearfish ratios in the Atlantic Ocean, including retrospective analyses. A new paper describing some of the preliminary work has been accepted in a peer review journal and will be published in 2009. In addition, SEFSC continues to conduct pelagic longline research to evaluate gear behavior, and the effects of gear modification on catch rate and survival of target and non-target species. The first of a series of peer review papers on this topic was published in the fall, 2008. The SEFSC also finalized PSAT research of sailfish and blue marlin in the eastern and western north Atlantic during 2008. Several of

these papers were also published in peer review journals during 2008. Preliminary results of this work were presented in an international symposium on the use of electronic tags to monitor the movements of marine species held in San Sebastian, Spain, in the fall of 2008.

The cooperative billfish research between U.S. (Virginia Institute of Marine Science) and Brazilian scientists that was initiated in 2005 continued in 2006 and 2007. This research will also focus on PSAT tagging of billfish and the collection of biological materials (including larvae) for ageing and molecular genetic analyses. The Fishery Management Group of the University of Miami is carrying out research on Atlantic billfish on three areas, population parameter estimation, population modeling and development of socio-economic indicators. Others at the University of Miami's Rosenstiel School and elsewhere are conducting research on early life history, reproductive biology and ecology of billfishes, as well as age and growth estimation. US scientists attended an intercessional ICCAT meeting on tagging in Madrid during 2008.

#### *2.2.8 Seabird research*

Seabirds make up a small component of the observed non-fish bycatch of the U.S. pelagic longline fleet in the western North Atlantic. From 1992 through 2008, the seabird bycatch observed by the Pelagic Observer Program (POP) consisted of 125 birds seen in regular POP operations and 17 additional birds seen in POP-assisted "experiments" that had special coverage. The reported number caught per year varied from 0 in 1996 to 33 in 1997, and the average annual observed bird bycatch was 7.4. The low bycatch rate in observed sets made estimation of the total seabird bycatch of the fleet based on observer data problematic. Research at the NMFS/SEFSC in the current year has focused on the exploration of alternative methods of total bird bycatch estimation. In work for the SEFSC conducted at Virginia Polytechnic Institute, nine alternative methods were explored to estimate the seabird bycatch for the years of observations. In each case, observations from all years were used to estimate the bycatch for each year. Total estimates from five of the nine methods were similar, varying from 2464 to 2891 birds for all years and averaging 144 to 169 per year. Of the other methods, one yielded much lower estimates and the other three yielded exceptionally high estimates. The estimate for 2008 from the five methods with similar totals and averages varied from 3 to 21 (3, 3, 4, 21, 21). See Appendix 3 for more information from this study.

U.S. scientists participated in the 2009 meeting of the ICCAT Sub-Committee on Ecosystems, where the six-stage framework methodology adopted at the 2007 meeting was advanced (see Report of the 2009 Inter-sessional Meeting of the Sub-committee on Ecosystems, Recife, Brazil, 8-12 June 2009).

The area of the outer continental shelf off the Outer Banks of North Carolina supports what likely is the highest diversity of oceanic seabirds anywhere in the Western North Atlantic with many species present in any season of the year. In a survey addressing the conservation issues associated with planned exploratory drilling, Lee (1999) found an exceptionally high diversity (49 species) of seabirds off the North Carolina Outer Banks on the shelf break where the 30-, 40-, 50-, and 100-fathom (~ 54.9, 73.2, 91.4, and 182.9-meter) bathymetric contours meet. The birds were sighted in ship-board surveys covering a relatively small area referred to as "The Point", which is centered at about 35° 32' N

The U.S. pelagic longline fishery operates in the area of the outer continental shelf off the Outer Banks of North Carolina which supports what likely is the highest diversity of oceanic seabirds anywhere in the Western North Atlantic, as well as more broadly in the Western North Atlantic Ocean and Gulf of Mexico. In an analysis of seabird bycatch reported by the Pelagic Observer Program (POP), Winter et al. (2009 draft) noted that the incidents of seabird bycatch were highly aggregated spatially. Fifty-six of the 60 observed sets with seabird bycatch, comprising 120 of 124 birds reported by observers (outside of experiments) from 1992 through 2007, were located between 66.4° W and 78.9° W (~21% of the longitude range of all observed sets), and between 31.6° N and 41.0° N (~19% of the latitude range of all observed sets). The Point is roughly centered in this latitudinal range and near its western longitudinal limit.

Effective 18 June 2009, the NMFS, designated the Cape Hatteras a Special Research Area (CHSRA) based on concerns of high pilot whale bycatch over the past 5 years. Fishermen planning to fish within this area with longline gear are required to carry an on-board observer if requested to do so. Because this area is of high seabird diversity, the increased observer coverage might provide increased confidence in the data that already suggest that imperiled seabirds foraging in the area are not a part of the longline bycatch. For more information, see [http://sero.nmfs.noaa.gov/pr/PelagicLonglineTakeReductionPlan\\_000.htm](http://sero.nmfs.noaa.gov/pr/PelagicLonglineTakeReductionPlan_000.htm).

The National Marine Fisheries Service is collaborating with the U.S. Fish and Wildlife Service and bird



conservation organizations to improve the information on birds at sea in the Western North Atlantic. NMFS representatives have attended workshops of the Atlantic Marine Bird Conservation Cooperative since 2007, participating in breakout groups to discuss fishery bycatch, oil spill recoveries, tracking, seabird surveys, and other issues and opportunities. Collaborative efforts between NOAA and other groups are increasing the number of cruises that include experienced bird observers. A recently-formed Black-capped Petrel Group is generating a plan that includes tracking and is seeking funding.

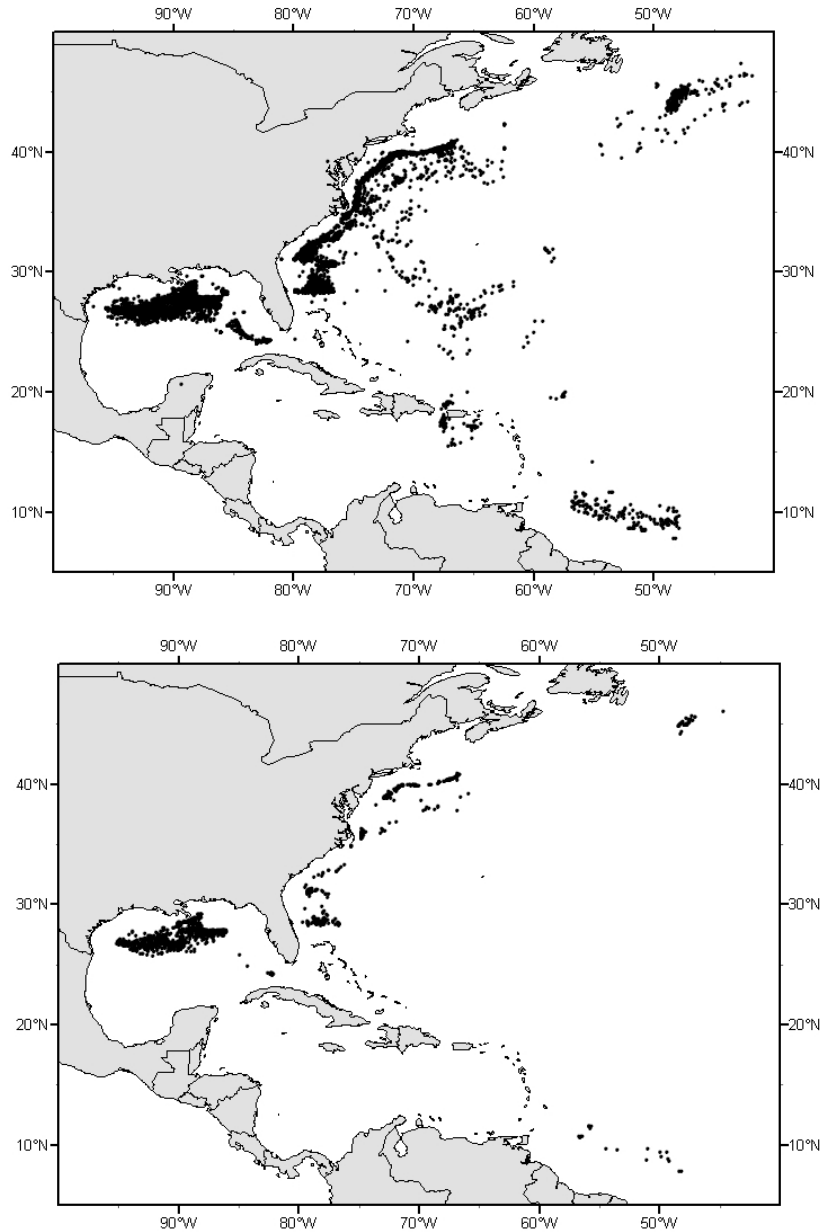
#### *2.2.9 Tagging*

Participants in the Southeast Fisheries Science Center's Cooperative Tagging Center (CTC) and The Billfish Foundation (TBF) Tagging Program (TBF) tagged and released 6,987 billfishes (including swordfish) and 424 tunas in 2008. This represents an increase of 91.5% for billfish and a decrease of 26.8% for tunas from the 2007 levels. There continues to be several electronic tagging studies involving bluefin tuna and billfish in the Atlantic Ocean and adjacent waters during 2008. These are discussed in the bluefin and billfish research sections above. There were 29 billfish recaptures from the CTC and TBF projects in 2008. This represents an increase of 12% from 2007. These recaptures were 18 sailfish, eight swordfish, one white marlin, and one striped marlin. A total of four tunas were recorded as recaptures in 2008, three of which were yellowfin and one was a bluefin tuna. This recapture level was a decrease of 66.6% from the 2007 values. The ICCAT Enhanced Research Program for Billfish (IERPBF) in the western Atlantic Ocean has continued to assist in reporting tag recaptures to improve the quantity and quality of tag recapture reports, particularly from Venezuela, Barbados, and Grenada.

#### *2.2.10 Fishery Observer Deployments*

*Domestic Longline Observer Coverage.* In accordance with ICCAT recommendations, randomized observer sampling of the U.S. large pelagic longline fleet was continued into 2009 (see Figure 2.5). Representative scientific observer sampling of this fleet has been underway since 1992. The data collected through this program have been used to quantify the composition, disposition, and quantity of the total catch (both retained and discarded at sea) by this fleet which fishes in waters of the northwest Atlantic Ocean, Gulf of Mexico, and the Caribbean Sea. Selection of the vessels is based on a random sampling of the number of sets reported by the longline fleet. The percent of fleet coverage through 2008 ranged from 2.5% in 1992 to 13.5% in 2008. The targeted sampling fraction of the U.S. pelagic longline fleet was increased in to 8% in 2002.

A total of 11,566 sets (8,427,180 hooks) were recorded by observer personnel from the Southeast Fisheries Science Center (SEFSC) and Northeast Fisheries Science Center NEFSC programs from May of 1992 to December of 2008. During the period, observers recorded over 398,978 fish (primarily swordfish, tunas, and sharks), in addition to marine mammals, turtles, and seabirds during this time period. Document SCRS/04/168 provided a more detailed summary of the data resulting from observer sampling between 1992 and 2002. From March 9th through June 9th, 2008 the longline pelagic observer program increased the coverage of the longline fleet operating in the Gulf of Mexico. The goal of this increase was to collect data to better characterize the interaction between the longline fleet and bluefin tuna during the spawning season. A total of 670 longline sets were observed (504,384 hooks) from 33 vessels which accounted for approximately 75% of the trips during that period.



**Figure 2.5** – Position of longline sets as reported in pelagic logbooks (upper panel) and observed by the U.S. pelagic observer program (lower panel) in 2008.

*Shark Gillnet Fishery Observer Coverage.* The directed shark gillnet fishery operates year round in coastal waters off the US southeast coast. Sharks are the primary target species but at times other species are targeted within the same trip. Gillnets are set either in a drift, strike, or sink fashion. On-board observers have conducted observations of this fishery from 1993-1995 and 1998-present and reports of the catch and bycatch from these observations are available. All vessels that have an active directed or indirect shark permit and fish with gillnet gear are selected for coverage. In 2008, a total of 68 drift, and 134 sink gillnet sets were observed on 5 trips and 41 trips, respectively. No vessels were observed making strikenet sets for sharks. Trips targeted primarily sharks but trips targeting Spanish and king mackerel, kingfish, and multiple teleost species were also observed. Depending on gear and target, total observed catch composition varied from 12-99% shark, 1-86% teleosts and 1-3% batoids.

*Shark Bottom Longline Observer Coverage.* The shark bottom longline fishery is active in the Atlantic Ocean from about the Mid-Atlantic Bight to south Florida and throughout the Gulf of Mexico. The bottom longline gear targets large coastal sharks, but small coastal sharks, pelagic sharks, and dogfish species are also caught. Currently 214 U.S. fishermen are permitted to target sharks (excluding dogfish) in the Atlantic Ocean and Gulf of Mexico, and an additional 285 fishermen are permitted to land shark incidentally. Recent amendments to the Consolidated Atlantic Highly Migratory Species Fishery Management Plan based on updated stock assessments have eliminated the major directed shark fishery in the U.S. Atlantic. The amendments implement a shark research fishery, which allows the US National Marine Fisheries Service (NMFS) to select a limited number of commercial shark vessels on an annual basis to carry observers 100% of trips to collect life history data, and data for future stock assessments. Furthermore, the revised measures affect quotas, drastically reduce retention limits, and modify the authorized species in commercial shark fisheries. Specifically, commercial shark fishermen not participating in the research fishery are no longer allowed to land sandbar sharks, which have been the main target species for most fishermen. Additionally, commercial fishermen are required to maintain shark fins naturally attached to the shark carcass through landing. The revised measures also affect authorized species in recreational shark fisheries; modify time/area closures for commercial shark vessels deploying bottom longline gear; and modify regions, seasons, and shark dealer reporting frequency in the commercial shark fishery. Observations of the shark-directed bottom longline fishery in the Atlantic Ocean and Gulf of Mexico have been conducted since 1994. Observer coverage from 1994 through 2004 was coordinated by the Commercial Shark Fishery Observer Program (CSFOP), Florida Museum of Natural History, University of Florida, Gainesville, FL (Morgan et al. 2009). In 2005, responsibility for the fishery observer program was transferred to National Marine Fisheries Service (NMFS), Southeast Fisheries Science Center (SEFSC), Panama City Laboratory. From January to December 2008, a total of 53 shark directed trips with a total of 57 hauls were observed, Sharks comprised 95% of the catch, followed by teleosts (4.0%), invertebrates (0.4%), and batoids (0.5%).

## **Part II (Management Implementation)**

### ***Section 3. U.S. Implementation of ICCAT Conservation and Management Measures***

#### ***3.1 Catch Limits and Minimum Sizes***

##### ***3.1.1 Program for West Atlantic Bluefin Tuna (06-06; 08-04)***

Recommendation 08-04 revised the annual WBFT quota for the United States to 1,034.9 mt for 2009 and 977.44 mt for 2010, respectively, including 25 mt to account for bycatch related to directed longline fisheries in the vicinity of the management area boundary. Consistent with Recommendation 08-04, the United States has implemented a 2009-2010 two-year balancing period for limiting the harvest of BFT measuring less than 115 cm (45 inches) to 10 percent (by weight) of the U.S. quota. Recommendation 08-04 maintained the existing limit on the amount of underharvest that may be carried forward to the next year, (i.e., not to exceed 50 percent of a Contracting Party's current initial Total Allowable Catch) for 2009 and 2010, but lowers the allowable carry forward to 10 percent after 2010. Since 2008, the fishery has been managed on a calendar year basis. Accordingly, underharvest from the 2008 fishing year (1 January 2008 through 31 December 2008) was applied to the 2009 fishing year (1 January 2009 through 31 December 2009) resulting in an adjusted 2009 fishing year quota of 1,462.4 mt. The United States must report dead discard estimates to ICCAT annually and account for this mortality as part of the quota specification calculation process. During the 2008 calendar year, the United States landed an estimated 937 mt of BFT, which includes an estimated 173 mt of dead discards. Also, in conformance with 08-04, the United States prohibits directed fishing for Atlantic bluefin tuna in the Gulf of Mexico.

##### ***3.1.2. Recommendation to Establish a Multi-annual Recovery Plan for Bluefin Tuna in the Eastern Atlantic and Mediterranean (06-05; 07-05)***

As discussed in Section 3.3, the United States has implemented the Bluefin Tuna Catch Documentation Program (*Rec. 07-10*), as amended in 2008 (*Rec. 08-12*) to monitor all bluefin tuna imports, including those from the Eastern Atlantic and Mediterranean.

##### ***3.1.3. Resolution By ICCAT on Fishing Bluefin Tuna in the Atlantic Ocean (06-08)***

Resolution 06-08 requests CPCs to refrain from increasing effort by large-scale tuna longline vessels North of 10 degrees North latitude and between 35 degrees and 45 degrees West longitude from the 1999/2000 level. Consistent with resolution 06-08, the United States has reduced effort by large scale tuna longline vessels in the vicinity of the 45-degree West boundary line for Eastern and Western BFT since 1999/2000 through implementation of a limited access program and fishing gear restrictions.

##### ***3.1.4. Recommendation to Establish a Plan to Rebuild Blue Marlin and White Marlin Populations (06-09)***

Phase I of the ICCAT rebuilding plan requires countries to reduce commercial landings of Atlantic white marlin captured in pelagic longline and purse seine fisheries by 67 percent and reduce blue marlin landings by 50 percent from 1996 or 1999 landings (whichever is greater) through 2010. The United States has prohibited all commercial retention of billfish since 1988. For its part of the rebuilding program, the United States agreed to maintain regulations that prohibit all landings of marlins by U.S. pelagic longline fishermen, and to continue 10% scientific observer coverage levels of billfish tournaments through 2010. The United States currently meets or exceeds these observer requirements. The United States also agreed to limit annual landings by U.S. recreational fishermen to 250 Atlantic blue and white marlins, combined. Catch and release rates in the U.S. recreational fishery for Atlantic marlin are estimated to be very high (90 – 99%) based on tournament data, and minimum sizes have been established at 168 cm (66 inches) for white marlin and 251 cm (99 inches) for blue marlin.

A final rule was published in October 2006 that codified the ICCAT 250 marlin limit and established procedures to remain within the limit; prohibited the retention of billfish on all commercial vessels; and established a permit condition requiring that recreational vessels possessing an HMS permit abide by Federal regulations regardless of where fishing, unless a state has more restrictive regulations. In addition, since 1 January, 2008, all anglers participating in Atlantic billfish tournaments have been required to use only non-offset circle hooks when

deploying natural baits or natural bait/artificial lure combinations. These management measures are expected to substantially reduce marlin mortality.

All registered Atlantic billfish tournaments are selected to report landings and effort information to the National Marine Fisheries Service. The United States implemented a mandatory reporting program for billfish landed by recreational anglers who are not participating in registered tournaments in March 2003. The United States continues to refine estimation and data collection methodologies for rod and reel catches and landings of marlins. Preliminary 2009 calendar year data (not inclusive of all data sources) indicate landings of 29 blue marlin and 26 white marlin from recreational fishing activities. Preliminary 2008 calendar year data from all data sources indicate landings of 58 blue marlin and 59 white marlin from recreational fishing activities. Please refer to the U.S. Compliance Table for final aggregate U.S. landings.

#### *3.1.5 Recommendation to Establish a Rebuilding Program for North Atlantic Swordfish (06-02, 08-02)*

Recommendation 06-02 established a catch limit of 3,907 mt ww for the United States for 2007 and 2008, and included a provision allowing up to 200 mt of U.S. North Atlantic swordfish quota to be caught between 5 degrees North latitude and 5 degrees South latitude, and a provision to transfer 25 mt to Canada. The recommendation also limited carryover of unused quota to 50 percent of the baseline quota. Recommendation 08-02 extended the provisions of Recommendation 06-02 through 2009. The United States provided 1,345 mt of unused quota each year for 2007 and 2008 from the 2003 – 2006 management periods for use by developing states. Per the extension of Recommendation 06-02 (via Recommendation 08-02), the United States provided an additional 1,345 mt of underharvested North Atlantic swordfish to developing states in 2009. The United States transitioned from a 1 June – 31 May fishing year management cycle to a calendar year fishing year management cycle in 2007. Due to the switch to calendar years, 2007 was an abbreviated fishing year, from 1 June, 2007 through 31 December, 2007. Starting 1 January, 2008, the United States began managing NSWO and SSWO on a calendar year management cycle. During the 2006 fishing year (1 June, 2006 – 31 May, 2007), there was an underage that was added to the landings quota for the 2007 fishing year. Landings and discard estimates for the 2007 fishing year and 2008 calendar years are provided in the U.S. Compliance tables. The United States has a minimum size of 33 lb (15 kg) dressed weight, and a required minimum size of 29" (73 cm) cleithrum to caudal keel length or 47" (119 cm) lower jaw fork length, which are designed to correspond to the 119 cm minimum size limit, with zero tolerance. In 2008, 1.55 percent (by weight) of fish under this minimum size were harvested. This small over harvest is due to the occasional take of swordfish which are above the minimum length and therefore legal to land, but turn out to be below the corresponding minimum weight.

#### *3.1.6 Recommendation on South Atlantic Swordfish (06-03)*

Recommendation (06-03) established catch allocations for the United States of 100 mt ww each year for the period 2007 – 2009, inclusive, and allowed up to 100 mt ww of underharvest to be carried forward by the United States each of these years. The United States landed 0.0 mt of South Atlantic swordfish in 2007 and 2008.

#### *3.1.7 Recommendation on the Southern Albacore Catch Limits (07-03)*

The United States was subject to a catch limit of 100 mt in 2008; however, the United States does not have a directed fishery for southern albacore. U.S. landings of southern albacore tuna were 0 mt in calendar year 2007 and 2008.

#### *3.1.8. Recommendation on North Atlantic Albacore Catch Limits (03-06; 06-04; 07-02)*

Recommendation 06-04 extended the terms of Recommendation 03-06 through 2007. Under Recommendation 06-04, the United States was allocated a landing quota of 607 mt for 2007, which is a level consistent with average landings for the United States during the mid-1990s. The United States landed 531.7 mt during the 2007 calendar year. Recommendation 07-02 applies for 2008 and 2009 and sets the annual U.S. landings quota at 538 mt. The recommendations provided that overages/underages of annual catch limits should be deducted from, or added to, specific future catch limits, and the 2007 recommendation limits carryover of underharvest to 25 percent of the initial U.S. catch quota. The United States landed 248 mt during the 2008 calendar year.

In addition, pursuant to ICCAT's recommendation concerning the limitation of fishing capacity on North Atlantic albacore (1998), the United States submits the required reports providing a list of U.S. vessels operating in the fishery on an annual basis. The 2009 submission indicated that there were 221 vessels authorized to harvest North Atlantic albacore in the Convention area.

*3.1.9. Recommendation by ICCAT on Bigeye Tuna Conservation Measures for Fishing Vessels Larger than 24M Length Overall (98-03)*

The operative paragraphs of Recommendation 98-03, paragraphs 1 and 2, do not apply to the United States per paragraph 3, as the annual average catch of BET by the United States was below 2000 MT for the prescribed 5 year period.

*3.1.10 Recommendation on Bigeye Tuna Conservation Measures (04-01; 08-01)*

No catch limits apply to the United States since 1999 catch was less than 2,100 mt. To provide additional protection to the bigeye tuna stock, particularly the juvenile component, the United States has implemented a minimum size for this stock (which exceeds that formerly required by ICCAT of 3.2 kg). This minimum size of 27 inches (approximately 6.8 kg) applies to all U.S. fisheries landing bigeye tuna, both commercial and recreational. The United States landed 522.3 mt in calendar year 2007 and 488 mt in 2008.

*3.1.11 Recommendation on Yellowfin Size Limit (72-01; 05-01)*

In 2005, ICCAT repealed the minimum size limit of 3.2 kg that had been in place since 1972. The United States maintains a minimum size limit of 27 inches fork length (approximately 6.8 kg) in both recreational and commercial fisheries for yellowfin tuna.

*3.1.12 Recommendation by ICCAT on Supplemental Regulatory Measures for the Management of Atlantic Yellowfin Tuna (93-04)*

The United States has implemented a number of regulatory measures that ensure consistency with Recommendation 93-04, which prohibits increases in effective fishing effort for Atlantic yellowfin tuna over 1992 observed levels. The United States implemented a limited access program for pelagic longline vessels in 1999, which has resulted in a decrease in the number of vessels commercially permitted to fish for Atlantic tunas by approximately 70 percent from the early 1990s. The United States also implemented a retention limit of three fish per angler per trip in the recreational and charter/headboat fisheries in 1999. In 2000 and 2001, the United States closed three large areas to pelagic longline fishing in the U.S. Atlantic EEZ (including the Gulf of Mexico), which had demonstrable yellowfin tuna effort and catches. In 2004, the United States also implemented circle hook requirements in the pelagic longline fishery in which yellowfin tuna are caught, which contributes to reducing post-release mortality of incidentally caught yellowfin tunas, and, as noted above, the United States has maintained a minimum size for retaining yellowfin tuna despite the repeal of a minimum size by ICCAT.

*3.1.13 Resolution on Atlantic Sharks (03-10)*

Resolution 03-10 requested ICCAT parties and cooperating parties to provide the SCRS bycatch committee scheduled to meet in 2004 with information on shark catches, effort by gear type, and landings and trade of shark products, and called for the full implementation of National Plans of Action (NPOAs) by ICCAT parties and cooperating parties, in accordance with the Food and Agriculture Organization's (FAO) International Plan of Action (IPOA) for the Conservation and Management of Sharks. In conformance with this resolution, the United States provides shark data to the Secretariat, as appropriate. In addition, we adopted a National Plan of Action for the Conservation and Management of Sharks in February 2001, consistent with the International Plan of Action for Sharks.

*3.1.14. Recommendations on Atlantic Sharks (04-10; 05-05; 06-10; 07-06; 08-07)*

The original 2004 Recommendation established a timeline for review of the shortfin mako population assessment and development of recommendations for management alternatives (2005), as well as reassessment of blue sharks and shortfin mako (2007) by SCRS. Following the 2005 assessment, Recommendation 04-10 was amended via Recommendation 05-05 to include additional requirements for CPCs to implement and report on measures taken to reduce fishing mortality of North Atlantic shortfin mako sharks. The United States currently tracks the annual quota for pelagic sharks, which includes landings of shortfin mako, to ensure that catches of these species are under the designated quota. Tracking of the pelagic shark quota in recent years indicates that pelagic sharks, including shortfin mako sharks, do not constitute a significant portion of U.S. shark landings. The United States has catch limits in place for Atlantic porbeagle, shortfin mako, and blue sharks and will

continue to submit catch and effort data for sharks. In 2006, Recommendation 04-10 was further amended via Recommendation 06-10 to require a stock assessment and management alternatives for shortfin mako sharks and blue sharks in time for the 2008 annual meeting of the Commission. This assessment was completed by the SCRS in 2008.

Recommendation 04-10 also included reporting requirements for shark catches, including available historical data on catches; full utilization of shark catches; a requirement that CPCs prevent their vessels from having shark fins onboard that total more than 5% of the weight of sharks; a requirement that the ratio of fin-to-body weight of sharks be reviewed by the SCRS by 2005; and prohibitions on fishing vessels retaining, transshipping or landing any fins harvested in contravention to the Recommendation. In addition, the Recommendation encourages the release of live sharks, especially juveniles in fisheries not directed at sharks, as well as additional research to improve the selectivity of fishing gears and identify shark nursery areas. Recommendation 05-05 required CPCs to implement the provisions of Recommendation 04-10 for North Atlantic shortfin mako shark populations. The United States continues to fulfill the requirements of these recommendations through data collection programs and a variety of fishery restrictions including the Shark Finning Prohibition Act of 2000. This law prohibits the practice of finning nationwide and the possession or landing of shark fins without the corresponding carcass (67 FR 6194, 11 February, 2002). In 2008, NMFS published Amendment 2 to the 2006 Consolidated Atlantic HMS FMP that, among other things, required all sharks landed in the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea, to be landed with their fins naturally attached. Additionally, the United States adopted a National Plan of Action for the Conservation and Management of Sharks in February 2001, consistent with the International Plan of Action for Sharks, which calls for management measures to reduce waste to the extent practicable and to protect vulnerable life history stages, such as juveniles. The United States also currently enforces a minimum size limit and bag limits for recreationally caught sharks, commercial trip limits, and has established a time/area closure for shark bottom longline fishing in the mid-Atlantic to protect sharks in the nursery grounds. In 2008, the United States found that shortfin mako sharks are experiencing overfishing and appear to be approaching an overfished status. NMFS currently has proposed measures in the public comment stage (74 FR 36891) to address shortfin mako shark conservation through Amendment 3 to the 2006 Consolidated Atlantic HMS FMP.

In 2007, ICCAT issued Recommendation 07-06 requiring CPCs to take action toward the conservation of porbeagle sharks and North Atlantic shortfin mako sharks and to contribute data and research to future stock assessments of the species. Specifically, CPCs are to submit Task I and Task II data for sharks, take appropriate measures to reduce fishing mortality of porbeagle sharks and North Atlantic shortfin mako sharks, and implement research to identify potential nursery habitat of pelagic sharks. Furthermore, CPCs may conduct research on porbeagle sharks and North Atlantic shortfin mako sharks to submit to the SCRS. Recommendation 07-06 also requires the SCRS to conduct a stock assessment and recommend management advice for porbeagle sharks no later than 2009. Consistent with Recommendation 07-06, the United States significantly reduced the porbeagle shark quota in 2008 in Amendment 2 to the 2006 Consolidated Atlantic HMS FMP and, as noted above, is currently addressing shortfin mako shark mortality reductions in the Amendment 3 to the aforementioned FMP. The United States is actively involved in pelagic shark research and continues to submit all Task I and Task II data for sharks on an annual basis. U.S. scientists participated in the 2009 porbeagle shark assessment.

Recommendation 08-07 requires that all nations release bigeye thresher sharks unharmed and report all data on incidental catches. The United States has prohibited the harvest of bigeye thresher sharks in commercial and recreational fisheries since 1999. Since 2006, bottom longline and gillnet fishermen fishing for sharks have been required to attend workshops to learn how to release sea turtles, protected species, and prohibited shark species in a manner that maximizes survival. NMFS published a final rule on 7 February, 2007 (72 FR 5633), that requires participants in the Atlantic shark bottom longline fishery to possess, maintain, and utilize handling and release equipment for the release of sea turtles, other protected species, and prohibited shark species.

### **3.2 Closed Seasons**

#### *3.2.1. Domestic Time/Area Closures for ICCAT Species*

The United States takes an ecosystem approach to management of HMS species. As such, the United States implements a number of measures that exceed the standards set in ICCAT recommendations. At present, the Atlantic pelagic longline fishery of the United States is subject to several discrete time/area closures that are designed to reduce bycatch in the pelagic longline fishery by prohibiting pelagic longline fishing for ICCAT species in those areas during specified times. These closures affect offshore fishing areas up to 200 nautical miles

(nm) from shore (see Figure 3.2.1). Those closures are as follows: (1) Florida East Coast: 50,720 nm<sup>2</sup> year-round; (2) Charleston Bump: 49,090 nm<sup>2</sup> from February through April each year; (3) DeSoto Canyon: 32,860 nm<sup>2</sup> year-round; and (4) the Northeastern United States: 21,600 nm<sup>2</sup> during the month of June each year. Effective 1 January, 2005, the United States implemented a mid-Atlantic shark closed area for bottom longline gear from January through July of each year to protect dusky shark and juvenile sandbar sharks in pupping and nursery areas.

In addition, all HMS gear types are prohibited year-round, except for surface trolling only from May through October, in the Madison Swanson and Steamboat Lumps Marine Reserves (Figure 3.2.2). These closures were implemented for the protection of spawning aggregations of gag grouper, and the HMS management measures were originally set to expire on 16 June, 2010, consistent with Gulf of Mexico Fishery Management Council recommendations. However, on 7 November, 2008, the Gulf of Mexico Fishery Management Council requested that the expiration date be removed. On 5 August, 2009 (74 FR 39032), NMFS published a proposed rule that would remove the expiration date for the two reserves. Both of these reserves are located shoreward of the Desoto Canyon Closed Area (Figure 3.2.2). The Madison-Swanson Marine Reserve is 115 nm<sup>2</sup> in size, and the Steamboat Lumps marine reserve is 104 nm<sup>2</sup> in size. NMFS has also proposed a new, small time/area closure, called the “Edges 40 Fathom Contour” (5 August, 2009, 74 FR 39032), in order to backstop this closure that was implemented by the Gulf of Mexico Fishery Management Council (24 June, 2009, 74 FR 30001), which would provide additional protection for spawning gag grouper. The Edges 40 Fathom Contour is a 390 nm<sup>2</sup> gag spawning region located between the Madison-Swanson and Steamboat Lumps closure area, within the Gulf of Mexico. This area is closed to fishing for any Gulf of Mexico Fishery Management Council-managed species from January 1 through April 30 of each year. NMFS is proposing to close this area to all HMS fishing from January 1 through April 30 of each year.

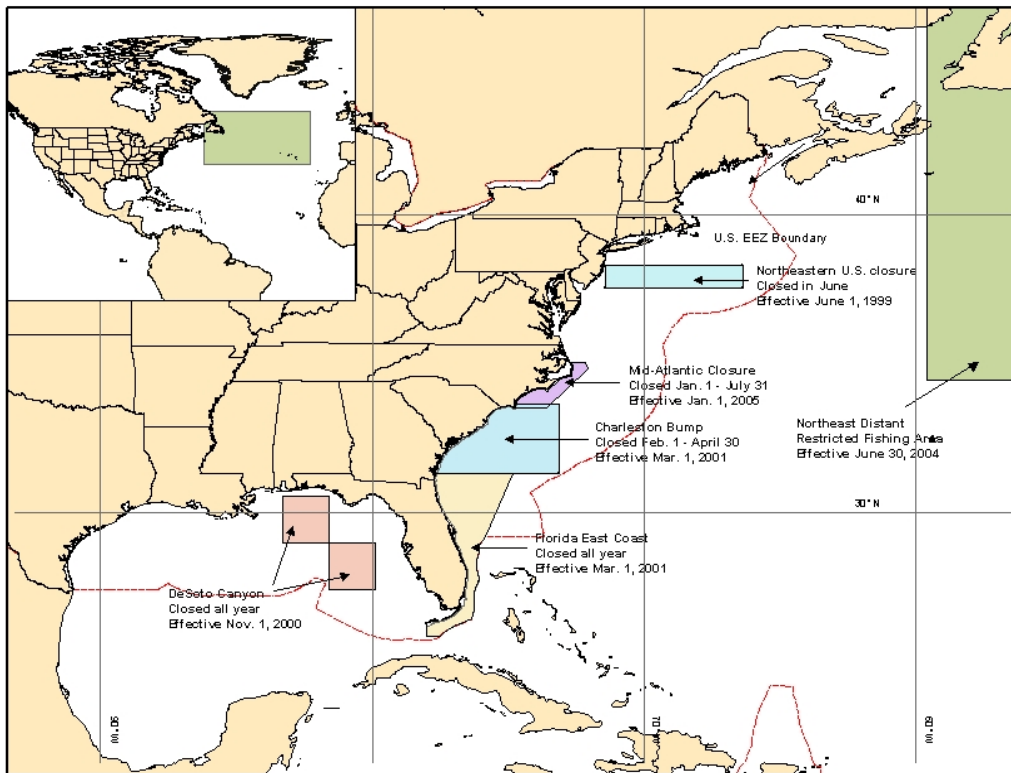
Additionally, on 7 February, 2007, NMFS published a final rule (72 FR 5633) that complements regulations that the Caribbean Fishery Management Council (CFMC) implemented on 28 October, 2005 (70 FR 62073), that closed six small distinct areas off of Puerto Rico and the U.S. Virgin Islands to bottom longline gear, year-round. The purpose of these closed areas is to protect essential fish habitat of reef-dwelling species. These areas are defined in Title 50, section 622.33 (a) of the Code of Federal Regulations.

Finally, NMFS published a final rule on 24 June, 2008 (73 FR 35778) and a correction was published on 15 July, 2008 (73 FR 40658), to complement regulations being implemented by the South Atlantic Fishery Management Council (SAFMC). The final rule for the SAFMC’s Amendment 14A to the Snapper Grouper Fishery Management Plan was published on 13 January, 2009 (74 FR 1621). In the final rule, the SAFMC implemented eight Type II Marine Protected Areas (MPAs) from North Carolina to the Florida Keys. Type II MPAs are closures throughout the year to most gear types except some fishing, such as trolling for HMS and other coastal pelagic species. The SAFMC requested NMFS to backstop these closures because of enforcement issues; many shark and snapper grouper fishermen possess the same permits and the gear is indistinguishable between the two fisheries. Therefore, NMFS has closed the eight MPAs to shark bottom longline gear.

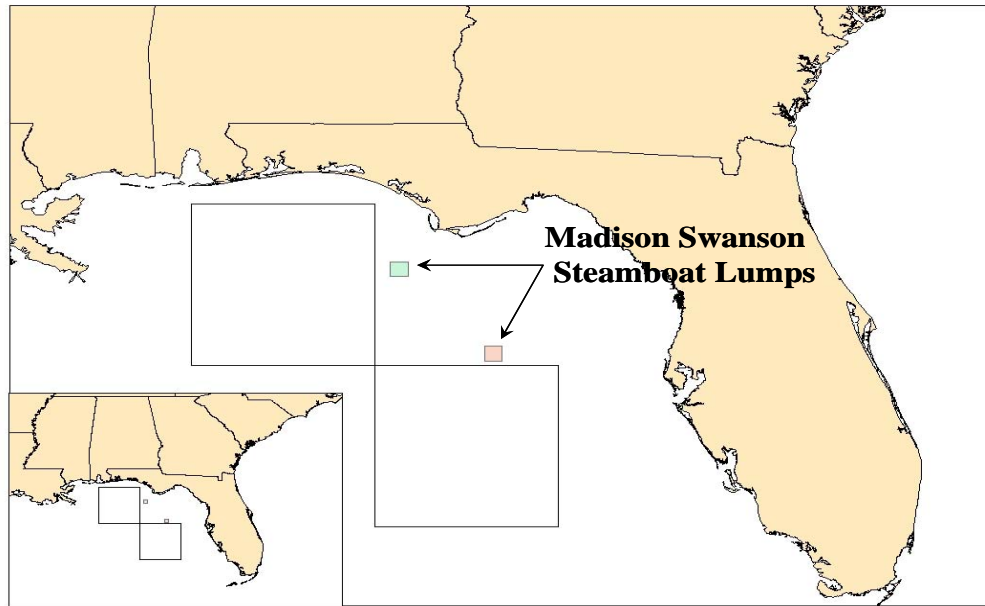
The Northeast Distant Statistical Sampling Area (NED) (2,631,000 nm<sup>2</sup>), which had been closed year-round (per regulations at 50 CFR part 223 and 635) from 2001 through mid-2004, has been reclassified as a gear restricted area. Pelagic longline vessels may only fish for highly migratory species in this area if they observe strict circle hook and bait restrictions and use approved sea turtle release gear in accordance with release and handling protocols. Outside of the NED, the U.S. HMS pelagic longline fishery is required to use circle hooks with certain bait combinations, depending on the region, as well as the required, approved sea turtle release gear and release and handling protocols. NMFS published a final rule on 7 February, 2007 (72 FR 5633), that requires participants in the Atlantic shark bottom longline fishery to possess, maintain, and utilize the same equipment and follow the same protocols for the safe handling and release of sea turtles and other protected species as required in the pelagic longline fishery. Additionally, on 23 September, 2008 (73 FR 54721), NMFS published a final rule that requires U.S. HMS pelagic longline and bottom longline vessels to possess an additional sea turtle control device as of 1 January, 2009.

The National Marine Fisheries Service issued Exempted Fishing Permits to three pelagic longline vessels to conduct research in portions of the Charleston Bump and Florida East Coast Closed Areas from 2008 to February 2010. NMFS is considering extending the expiration date of these permits to allow for the completion of the research. This research, which is being carried out with academic partners, would allow NMFS to determine the relative effectiveness of the closed areas under current fishery conditions and provide data which could help NMFS make determinations about whether modifications to the existing closed areas are warranted.





**Figure 3.2.1.** Selected existing U.S. time/area closures in HMS fisheries. Inset shows extent of the Northeast Distant restricted fishing area. The Mid-Atlantic Closure is applicable to bottom longline gear only. Note: the Northeast Distant (NED) was a closed area to all vessels as of 2001. It became the NED Restricted Fishing Area on 30 June, 2004, when it was opened to those participating in the NED experiment. Madison-Swanson, Steamboat Lumps, Edges 40 Fathom Contour, Caribbean bottom longline closures, and South Atlantic MPAs not included.



**Figure 3.2.2.** Madison-Swanson (upper left) and Steamboat Lumps (lower right) Marine Reserves. The Desoto Canyon closure is also shown for reference.

### **3.3 Trade and Compliance Related Measures**

#### *3.3.1. Trade Restrictive Recommendations (02-17; 03-18)*

No trade restrictive measures were passed by the Commission at the 2008 annual meeting. The trade restrictive measures that are currently in effect prohibit the importation of bigeye tuna from Bolivia (02-17) and Georgia (03-18). These measures were implemented by the United States on 6 December, 2004 (69 FR 70396).

#### *3.3.2. Recommendation Concerning Trade Measures (06-13)*

Recommendation 06-13 directs CPCs that import products of tuna and tuna-like species to collect relevant import, landings, or associated data on such products in order to allow for submission of that information to the ICCAT Secretariat. The United States collects information through a combination of programs, including the bluefin tuna catch documentation program, bigeye and swordfish statistical document programs, and through domestic Customs programs and relevant information is provided to the Commission.

#### *3.3.3. Bluefin Tuna Catch Documentation Program (08-12)*

On 2 June, 2008 (73 CFR 31380), the United States published final regulations effective 2 July, 2008, implementing the ICCAT bluefin tuna catch documentation program per Recommendation 07-10. This program repealed the pre-existing statistical document program and now tracks bluefin tuna landings and international trade using a bluefin tuna catch document. In June 2009, the U.S. program was updated to comply with the program changes implemented by Recommendation 08-12.

The U.S. program continues to require that bluefin tuna be fitted with a tail tag upon sale to a domestic dealer, and the tag (or tag number in the case of a cut carcass) must remain with the fish, thus tracking bluefin tuna from domestic harvest to international markets. The first annual bluefin tuna catch documentation report was submitted to ICCAT before the October 1, 2009, deadline and covered the time period from July 1, 2008, through June 30, 2009. The United States continues to work towards implementation of an electronic reporting system for imports covered by RFMO consignment document programs.

#### *3.3.4. Swordfish and Bigeye Tuna Statistical Document Programs (00-22, 01-21, 01-22, 03-19)*

Statistical document programs for swordfish and frozen bigeye tuna were implemented by the United States in 2005. As required under the statistical document programs, the United States submits reports to ICCAT twice yearly, providing information on import, export and re-export activity involving these species products. Statistical document reports for swordfish and bigeye tuna were submitted to the ICCAT Secretariat in April 2009 for the period covering July 2008 through December 2008 and will be submitted in October 2009 for the first half of the 2009 calendar year.

#### *3.3.5 Recommendation to Establish a Process for the Review and Reporting of Compliance Information (08-09)*

This measure provides that parties should submit to the Secretariat documented information that indicates possible non-compliance with ICCAT Conservation and Management measures well in advance of the ICCAT meeting and to respond to any allegations received from other parties under this process. The United States will provide any relevant information it collects to ICCAT in accordance with the recommendation and respond as appropriate to any documented issues raised by others concerning U.S. compliance with ICCAT rules.

### **3.4 Observer Programs**

The U.S. observer program currently meets two main objectives: monitoring of interactions between fishing gear and protected species (marine mammals, sea turtles, and to a lesser degree, sea birds), and monitoring of fishing effort and catch (estimation of total landings of target species and/or bycatch of non-target or prohibited species). An overview of observer programs in the United States can be found online at <http://www.st.nmfs.noaa.gov/st4/nop/index.html>. During calendar year 2008, the United States achieved 13.6 percent observer coverage expressed as a proportion of reported sets and 13.5 percent as a proportion of reported hooks in Atlantic pelagic longline fishery for highly migratory species. Click on the pelagic longline link on the map on the National Observer Program web page at <http://www.st.nmfs.noaa.gov/st4/nop/index.html> for information regarding the different observer programs. NMFS coordinates observer program management through its Office of Science and Technology/National Observer Program at the headquarters office outside of Washington, D.C. Observers for U.S. vessels in ICCAT fisheries are deployed from regional programs in Miami, Florida and Panama City, Florida.

The United States hosted the 2009 International Fisheries Observer and Monitoring Conference in Portland, Maine in July 2009 and sponsored the participation of a number of attendees from developing nations. This event was an important opportunity to improve fishery monitoring programs worldwide through sharing of practices and is a valuable forum for dialog between those responsible for monitoring fisheries and those who rely upon the data they collect. The United States also organized and jointly conducted with the host government two observer training workshops in West Africa (Ghana and Senegal) over the last two years to help develop local capacity for such programs and is planning to organize additional observer trainings in the region.

### **3.5 Vessel Monitoring**

#### *3.5.1 Recommendation by ICCAT Concerning Minimum Standards for the Establishment of a Vessel Monitoring System in the ICCAT Convention Area (03-14)*

The United States implemented a fleet-wide VMS requirement in the Atlantic pelagic longline fishery effective September 1, 2003 (June 25, 2003, 68 FR 37772), consistent with the terms of recommendations 03-14 and 04-11. This rule requires all vessels away from port with pelagic longline gear onboard to operate their VMS units. In addition to what is required for these recommendations, the United States issued a rule in December of 2003 (24 December, 2003, 68 FR 74746), requiring VMS operation for vessels with bottom longline gear onboard between 33°00' N. latitude and 36°30' N. latitude or near the mid-Atlantic shark closed area and for shark gillnet vessels operating during the right whale calving season. This rule was implemented in December 2003 for purposes of domestic Atlantic shark management. Recommendation 07-08 applies to vessels fishing for bluefin tuna in the eastern Atlantic Ocean and Mediterranean Sea and is not applicable to the United States.

### ***3.6 Measures to Ensure Effectiveness of ICCAT Conservation and Management Measures and to Prohibit Illegal, Unreported and Unregulated Fishing***

#### ***3.6.1 Management Standard for the Large-Scale Tuna Longline Fishery (01-20)***

In 2001, ICCAT resolved that minimum management standards should be established for issuance of fishing licenses to tuna longline vessels greater than 24 meters in overall length and that an annual report should be submitted to ICCAT using a specific format. The United States issued permits to 17 pelagic longline vessels over 24 meters in overall length in 2008. The U.S. submission is provided via ICCAT form: COMP-017-LSTLV, and is attached as Appendix 4.

#### ***3.6.2 Recommendation by ICCAT Concerning the Duties of Contracting Parties and Cooperating Non-Contracting Parties, Entities, Fishing Entities in relation to their vessels in the ICCAT Convention Area (03-12)***

The United States is implementing this measure through various means (e.g., licensing requirements, monitoring control, and surveillance measures, maintaining up-to-date records of U.S. vessels authorized to fish species managed by ICCAT in the Convention area, etc) as described throughout this annual report. Further, a list detailing the enforcement actions taken on ICCAT species is provided in Appendix 5.

#### ***3.6.3 Recommendation to Establish a List of Vessels Presumed to Have Carried Out Illegal, Unreported, and Unregulated Fishing Activities (06-12) and Recommendation by ICCAT Amending ICCAT's List of Fishing Vessels Presumed to be engaged in Illegal, Unreported and Unregulated (IUU) Fishing Activities in the ICCAT Convention Area and Other Areas (07-09)***

The United States has laws and regulations that serve to prohibit the import of tuna and tuna-like species from vessels included in the IUU vessel list, and we are developing regulations to clarify domestic implementation of other aspects of this recommendation. The following specific regulations directly address the import of tuna or tuna-like species into the United States from vessels engaged in IUU fishing in the ICCAT Convention area:

##### ***50 CFR Part 635.41 Products denied entry***

(b) All shipments of tuna or tuna-like species, or their products, in any form, harvested in the ICCAT convention area by a fishing vessel that is required to be listed, but not listed on the ICCAT record of authorized vessels will be denied entry into the United States.

(c) All shipments of tuna or tuna-like species, or their products, in any form, harvested in the ICCAT convention area by a fishing vessel listed on the ICCAT record as engaged in illegal, unreported, and unregulated fishing will be denied entry into the United States.

(d) All shipments of tuna or tuna-like species, placed in cages for farming and/or transshipment, harvested in the ICCAT convention area and caught by a fishing vessel included on the ICCAT list as engaged in illegal, unreported, and unregulated fishing will be denied entry into the United States.

#### ***3.6.4 Recommendation by ICCAT to Promote Compliance By Nationals of Contracting Parties, Cooperating Non-Contacting Parties, Entities, or Fishing Entities with ICCAT Conservation and Management Measures (06-14)***

This recommendation requires CPCs to take appropriate measures in accordance with their applicable laws and regulations to investigate and respond to allegations and verifiable incidents of IUU fishing activities by their nationals, cooperate with the relevant agencies of other CPCs, and to report to ICCAT on actions and measures taken in accordance with the recommendation, effective July 2008. The United States complies with the requirements of this recommendation by pursuing reports of illegal fishing activities by its citizens. A report of enforcement related activities pertaining to ICCAT species, which includes any IUU related enforcement actions, can be found in Appendix 5, NOAA Enforcement Actions Taken on ICCAT Species.

#### ***3.6.5. Resolution by ICCAT Further Defining the Scope of IUU Fishing (01-18)***

IUU fishing is the focus of growing attention in the United States, due to its adverse impacts on target fish stocks, habitat, fish markets, bycatch, and competition with legal fishing. The United States has taken action to

implement this resolution, which calls upon CPCs to take every possible action, consistent with relevant laws, to instruct importers, transporters, and others in the fishing industry to refrain from engaging in transaction and transshipment of tunas and tuna-like species caught by fishing vessels that have been engaged in IUU fishing activity. Specifically, under domestic regulations all shipments of tuna and tuna-like species or their products harvested in the ICCAT Convention area by a fishing vessel listed on the ICCAT IUU list will be denied entry into the United States. (See section 3.6.4.) In addition, the U.S. fishing industry has been advised to consult the IUU vessel lists of Regional Fishery Management Organizations before making commercial arrangements with vessels. The U.S. industry has been advised that the penalties for noncompliance may include restricted port access or unloading prohibitions.

*3.6.6. Recommendation by ICCAT to Adopt Additional Measures Against Illegal, Unreported and Unregulated (IUU) Fishing (03-16)*

This recommendation requires CPCs to take the necessary measures to prohibit landings, placement in cages for farming, and/or transshipment of tunas or tuna-like species that were caught by fishing vessels engaged in IUU fishing activity consistent with their rights and obligations under international law. As noted previously, the United States closely monitors and controls its bluefin tuna and other ICCAT fisheries. In addition, U.S. vessels do not participate in Atlantic bluefin tuna farming operations, and the United States prohibits at sea transshipment.

**3.7 Other Recommendations**

*3.7.1 Recommendation by ICCAT on Vessel Chartering (02-21)*

A final rule was published on December 6, 2004 (69 FR 70396), to implement recommendation 02-21 concerning vessel chartering. The United States collects all relevant information for monitoring before issuing the permits necessary to allow chartering to be undertaken and has reported chartering activities to ICCAT. Since the adoption of recommendation 02-21, the United States has issued only one chartering permit (in late 2004), which authorized chartering activities to take place in the ICCAT Convention area during 2005.

*3.7.2 Recommendation by ICCAT Concerning the Recording of Catch by Fishing Vessels in the ICCAT Convention Area (03-13)*

The United States requires vessels issued commercial Atlantic tunas, shark or swordfish permits, as well as charter and headboat vessels fishing for Atlantic highly migratory species, to maintain and submit logbooks upon selection for reporting by the U.S. Government regardless of vessel length. This includes, for example, 100 percent of Atlantic pelagic longline vessels fishing for Atlantic tunas, shark, or swordfish, regardless of vessel length. For information on the implementation of this recommendation relative to recreational fishing vessels, see the section 3.7.3 below.

*3.7.3 Resolution on Improving Recreational Fishery Statistics (99-07)*

Recreational landings are estimated through a combination of tournament surveys (the Recreational Billfish Survey), the Large Pelagic Survey (LPS), the Marine Recreational Fishing Statistics Survey (MRFSS), mandatory non-tournament landings reporting requirements for Atlantic blue and white marlins, sailfish, swordfish, and bluefin tuna, as well as State landings data. Final regulations adopted in 1999 require selected HMS charter/headboat vessels that do not already complete a logbook to do so. Registration of all recreational fishing tournaments for Atlantic highly migratory species has been required since 1999. All tournaments for Atlantic highly migratory species are required to submit landing reports, if selected. Longstanding U.S. policy is to select 100 percent of billfish tournaments for reporting. All non-tournament landings of Atlantic billfish and swordfish are required to be reported to the National Marine Fisheries Service within 24 hours of landing. In the fall of 2007, the United States enhanced recreational reporting by implementing a new internet based non-tournament reporting system for Atlantic billfish, including swordfish. The United States is in the process of improving on the current MRFSS system through the Marine Recreational Information Program (MRIP). MRIP is an improved national system of regional surveys that will replace existing marine recreational fishing data collection programs and provide better regional monitoring of recreational fishing participation, effort, catches, landings and releases of finfish species.

*3.7.4 Recommendation by ICCAT Concerning the Establishment of an ICCAT Record of Vessels over 24 Meters authorized to operate in the Convention Area (02-22)*

The United States submitted the list of vessels required, pursuant to this recommendation, to ICCAT in June 2009. At that time, there were 180 U.S. vessels that met the appropriate criteria.

#### *3.7.5 Resolution on Sea Turtles (03-11)*

The 2003 resolution on sea turtles encourages ICCAT members and cooperating non-members to collect and provide the SCRS with information on interactions with sea turtles in ICCAT fisheries, including incidental catches and other impacts on sea turtles. The measure also encourages the release of all sea turtles that are incidentally caught alive and to share information, including technical measures, to reduce the incidental catch of sea turtles, and to ensure the safe handling of all turtles that are released to improve their survivability. The resolution also calls for the development of data collection and reporting methods for the incidental by-catch of sea turtles and to support efforts by the FAO to address the conservation and management of sea turtles. The United States complies with all of these requests.

In 2004 (6 July, 2004; 63 FR 40734), the United States codified regulations to reduce sea turtle bycatch in Atlantic pelagic longline fisheries for highly migratory species. These measures pertain to the entire U.S. Atlantic pelagic longline fishery, and include: mandatory bait specifications, use of circle hooks (size of hook depending on fishing locale), and the mandatory possession and use of sea turtle handling and release gear on board all vessels with pelagic longline gear. The United States continues to modify the suite of disentanglement and release gears required to be onboard longline vessels as new gears and information are developed.

#### *3.7.6 Recommendation by ICCAT Establishing a Program for Transshipment by Large-Scale Longline Fishing Vessels (06-11)*

This recommendation establishes a program of transshipment affecting tuna longline and carrier vessels, including the establishment of an ICCAT record of authorized carrier vessels, documentation requirements, and extensive obligations and procedures pertaining to transshipment to assist in combating IUU fishing, ensure adequate monitoring of transshipment activities, and collecting catch data from large-scale vessels. U.S. regulations prohibit transshipment of highly migratory species products in the Convention area.

#### *3.7.7 Recommendation by ICCAT for a Revised Port Inspection Scheme (97-10)*

The United States generally prohibits foreign fishing vessels from landing in U.S. ports fish or fish products harvested or taken onboard on the high seas, with a few exceptions, including for landings in some Pacific U.S. territories. Under domestic regulations, vessels carrying fish species subject to regulations pursuant to a recommendation of ICCAT and their catch, gear, fishing logbooks and manifests are subject to inspection. See Section 4 below for additional information.

#### *3.7.8 Recommendation by ICCAT on Compliance with Statistical Reporting Obligations (05-09)*

Recommendation 05-09 is intended to address compliance issues with statistical reporting obligations. It requires the Secretariat to identify data gaps, the SCRS to evaluate the impacts of data gaps on stock assessments and formulation of management advice, and for Contracting parties and CPCs, to provide explanations regarding reporting deficiencies and data gaps along with plans for corrective action. The United States was compliant with its statistical reporting obligations in 2008.

#### *3.7.9 Recommendation by ICCAT on Bluefin Tuna Farming (06-07)*

Atlantic bluefin tuna are not farmed in U.S. waters. The U.S. bluefin tuna catch documentation program applies to farmed as well as wild-caught product and catch documents are required for imports of all farmed product.

#### *3.7.10 Electronic Statistical Document Program (06-16)*

The United States continues to implement an electronic system for the collection and dissemination of trade information. The International Trade Data System is a requirement under U.S. domestic legislation aimed at improving the efficiency of import and export processes as well as ensuring compliance with obligations to monitor the origin and safety of products. Given the domestic requirement to collect information from the trade community (shipper, carriers, brokers, etc.) in an electronic format, the United States is investigating ways to integrate ICCAT's statistical document programs into the internet-based electronic portal. As of September

2008, NMFS has catalogued all of the information collection requirements and the respective data elements for the several seafood trade monitoring programs established either by U.S. domestic law or by the RFMOs to which the United States is a party. These requirements have been communicated to U.S. Customs and Border Protection through a Concept of Operations document. The Concept of Operations was approved by Customs in July 2009. NMFS has started the process of issuing regulations to implement the electronic collection of trade data for the subject seafood products by issuing an Advanced Notice of Proposed Rulemaking in May 2009 ([www.regulations.gov](http://www.regulations.gov)). NMFS will consult with U.S. importers and exporters from ICCAT parties to determine the most efficient means of collecting the required data in electronic format to support admissibility decisions. More detailed information on the U.S. International Trade Data System can be found on the [www.itds.gov](http://www.itds.gov) internet site.

#### *3.7.11 Recommendation by ICCAT on Reducing Incidental Bycatch of Seabirds in Longline Fisheries (07-07)*

The United States does not have any vessels actively participating in ICCAT-managed fisheries south of 20 degrees S longitude. A description of the U.S. implementation of other measures called for in the recommendation can be found in Appendix 3.

#### *3.7.12 Other resolutions and recommendations*

The following were not addressed in this report as the United States does not participate in the relevant fishery or does not participate in specific activities covered by the measures:

- [08-03] Recommendation by ICCAT on Mediterranean Swordfish
- [07-08] Recommendation by ICCAT Concerning Data Exchange Format and Protocol in Relation to the Vessel Monitoring System for the Bluefin Tuna Fishery in the ICCAT Convention Area
- [07-01] Recommendation by ICCAT on Mediterranean Swordfish
- [03-04] Recommendation by ICCAT Relating to Mediterranean Swordfish
- [99-03] Recommendation on the Establishment of a Closed Area/Season for the Use of Fish-Aggregation Devices

### ***Section 4. Inspection Scheme and Activities***

U.S. Atlantic enforcement for ICCAT species is undertaken by the NOAA Office of Law Enforcement (OLE), the U.S. Coast Guard, and by States and territories with maritime boundaries in the Atlantic Ocean, Gulf of Mexico, and/or Caribbean Sea. Enforcement activities include monitoring and inspecting offloads at landing facilities and marinas in conjunction with dealer record checks and at sea boarding and inspection.

A summary of U.S. enforcement actions taken in ICCAT fisheries is provided in Appendix 5. From October 1, 2008, to September 30, 2009, NOAA OLE agents devoted more than 346 hours to various activities relevant to the protection of several Atlantic HMS species (tuna, swordfish and billfish). The U.S. Coast Guard also enforces HMS fishery regulations. During this same period, the Coast Guard boarded 143 vessels resulting in 7 significant violations. As enforcement of regulations for tuna and tuna-like species is just one of many vital component missions that the Coast Guard undertakes in the course of fisheries enforcement and of other duties, for every actionable incident documented, Coast Guard personnel have logged hundreds of hours monitoring for a range of violations. From October 1, 2008, to September 30, 2009, the total Coast Guard Atlantic Ocean and Gulf of Mexico fisheries enforcement focused effort involved 1,896 aircraft patrol hours, 7,998 boat patrol hours, and 45,887 cutter (large vessel) patrol hours. In addition, states and territories of the United States with maritime boundaries relevant to ICCAT species enforcement on the Atlantic Ocean, Gulf of Mexico, and/or Caribbean Sea maintain a total of more than 1,400 officers dedicated to marine conservation law enforcement and reported 9,022 staff hours of focused enforcement of regulations for tuna and tuna-like species.

### ***Section 5. Other Activities***

Recent U.S. management action for Atlantic highly migratory species can be found online at: <http://www.nmfs.noaa.gov/sfa/hms>.

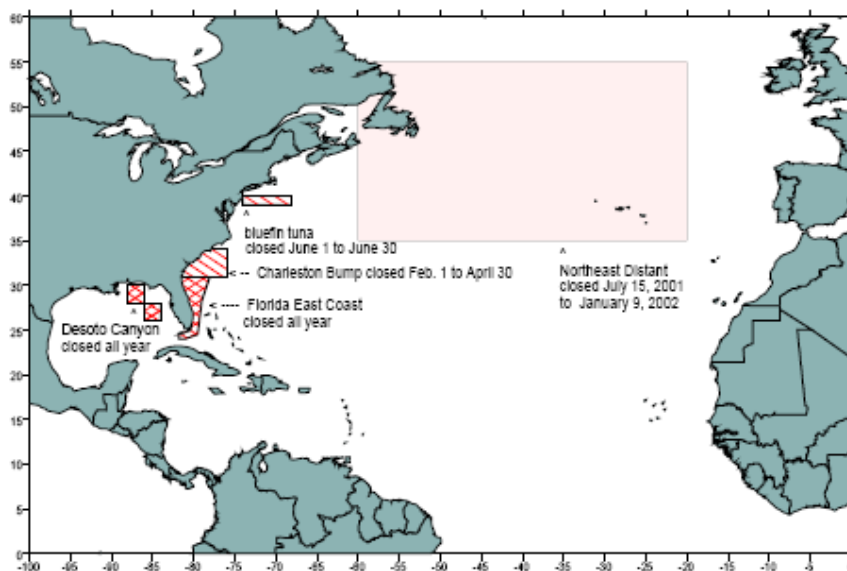
Federal register notices containing the full text of proposed and final regulations can be found at: <http://www.gpoaccess.gov/fr/index.html>.

## APPENDIX 1

### Effects of time/area closures on the U.S. swordfish fishery.

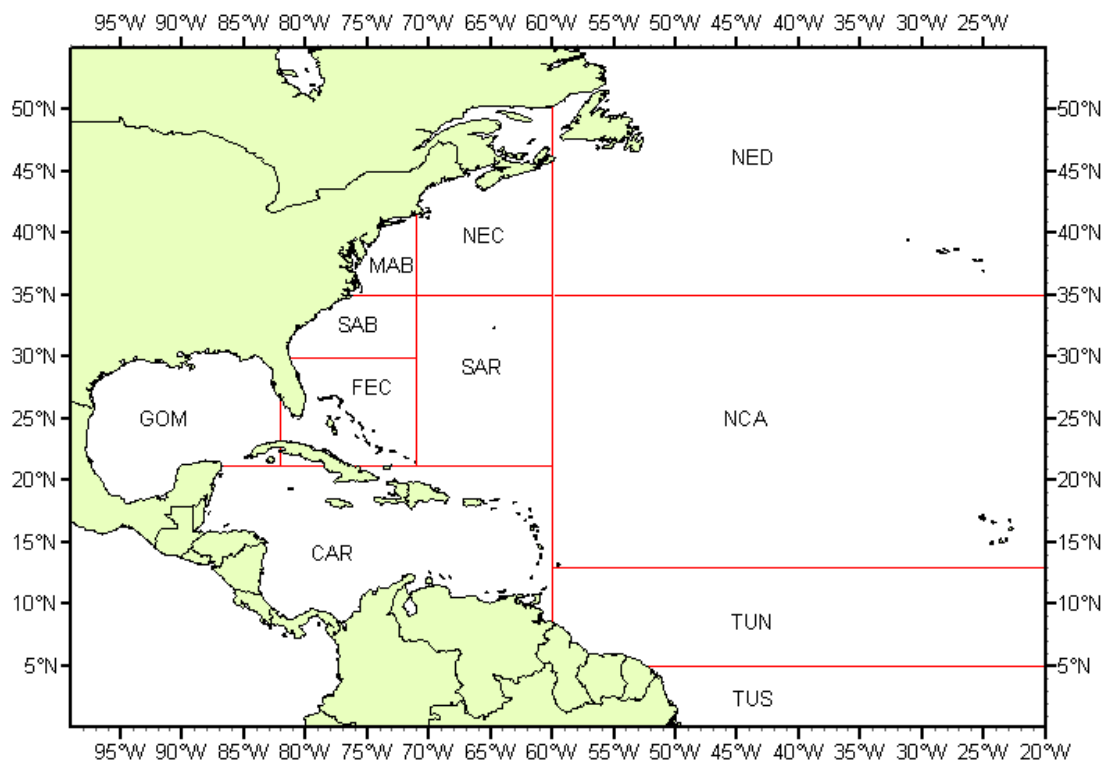
Beginning in the year 2001, U.S. pelagic longline fishing was prohibited or restricted in the five areas shown in *Appendix Figure 1.1*. The three southern areas, (Charleston Bump, Florida East Coast, and Desoto Canyon), were selected, at least in part, to reduce the catch of swordfish < 125 cm and other bycatch. The bluefin tuna area was closed primarily to reduce the catch of bluefin smaller than legal size for sale by U.S. fishers. Longline vessels were allowed to fish in the closed Northeast Distant area only if they participated in a circle hook fishing experiment aimed to investigate the performance of circle hooks with respect to sea turtle bycatch and if they carried a scientific observer. In 2002 and 2003, the Northeast Distant area remained closed year round to all longline vessels (except those participating in the turtle study); it was reopened to the entire fleet in 2004. Pelagic longline vessels may only fish for highly migratory species in this area if they observe strict circle hook and bait restrictions and use approved sea turtle release gear in accordance with release and handling protocols.

The number of longline vessels in the U.S. fishery targeting swordfish declined steadily from the mid 1990s, reached the lowest numbers in 2006, and showed a slight increase in 2007 and 2008. Reported effort (hooks) declined initially, remained fairly stable through 2001, and further declined to the lowest reported number in 2006 (*Appendix Table 1.1*). The percentage effort in hooks and the catch of swordfish < 125 cm in numbers (reported) and in metric tons (estimated) in 2006, 2007, and 2008 are compared to the average effort and catch from 1997 through 1999 (*Appendix Table 1.2*). There was some overall reduction in effort, reported in hooks fished. Some of the effort previously reported from the Florida East Coast fishing area appears to have redistributed into the Gulf of Mexico and up to the South Atlantic and Mid-Atlantic Bights (See *Appendix Figure 1.2* for domestic areas). The years 2005, 2006, and 2007 and the average (1997-1999) catch of swordfish < 125 cm in numbers (reported) and in metric tons (estimated) and effort in hooks are reported by area and time/area status in *Appendix Table 1.3*. Although the metric tons of swordfish < 125 cm estimated caught increased in some areas compared to the 1997-99 average, notably the Caribbean and the Gulf of Mexico, the overall change in estimates was a reduction of approximately 50% in the years since implementation.



**Appendix Figure 1.1-** Time/area closures for the U.S. longline fishery in 2008. Note that the Northeast Distant area is currently open for fishing activities.





**Appendix Figure 1.2-** US domestic fishing areas: Caribbean (CAR), Florida East coast (FEC), Gulf of Mexico (GOM), Mid Atlantic Bight (MAB), Northeast Central (NEC), Northeast Distant (NED), South Atlantic Bight (SAB), Sargasso Sea (SAR), North Central Atlantic (NCA), Tuna North (TUN), and Tuna South (TUS).

**Appendix Table 1.1.** *Numbers of Active US Pelagic Longline Vessels.* "Vessels" indicates the number of vessels that submitted at least one positive fishing report during that year, "Vessels that caught SWO" corresponds to the number of vessel that reported catching at least one swordfish during that year and "Vessels that caught SWO in 5 month period" indicates the number of vessels that reported catching at least one swordfish per month in at least five months of that year. "Hooks Reported" includes all submitted logbooks single pelagic longline sets and summary records.

Year	Vessels	Vessels that caught SWO	Vessels that caught SWO in 5 month period	Hooks reported
1989	456	415	251	7,927,401
1990	419	363	209	7,500,095
1991	342	308	176	7,754,127
1992	340	304	184	9,076,717
1993	435	306	177	9,735,806
1994	501	306	176	10,351,805
1995	489	314	198	11,270,539
1996	367	275	194	10,944,660
1997	352	265	167	10,213,780
1998	288	233	139	8,120,273
1999	226	200	143	7,996,685
2000	206	185	135	8,158,390
2001	185	168	114	7,897,037
2002	149	140	107	7,107,958
2003	123	119	94	6,862,091
2004	117	114	96	7,345,048
2005	112	108	79	5,973,150
2006	103	102	77	5,522,236
2007	119	117	90	6,312,406
2008	121	121	86	6,172,529

**Appendix Table 1.2.** *Catch in numbers (reported) and in metric tons (estimated) of swordfish < 125 cm and reported number of hooks in years 2006-2008 by pelagic longline vessels expressed as percentage of the mean values from years 1997-1999 by area Caribbean (CAR), Florida East coast (FEC), Gulf of Mexico (GOM), Mid Atlantic Bight (MAB), Northeast Central (NEC), Northeast Distant (NED), and South Atlantic Bight (SAB).*

	Number of SWO				Number of Hooks				Metric tons			
	Mean	2006	2007	2008	Mean	2006	2007	2008	Mean	2006	2007	2008
CAR	433	13%	11%	17%	235,268	31%	14%	34%	6	12%	12%	13%
FEC	2,488	3%	7%	10%	607,495	35%	49%	88%	37	4%	2%	8%
GOM	1,806	91%	124%	107%	2,822,528	80%	85%	68%	17	90%	107%	121%
MAB	1,195	85%	118%	72%	990,152	99%	128%	134%	18	80%	123%	64%
NEC	767	20%	20%	89%	754,283	50%	42%	69%	11	20%	22%	82%
NED	972	8%	27%	26%	496,306	68%	56%	49%	13	90%	29%	23%
SAB	2,394	44%	66%	67%	585,496	69%	103%	114%	39	47%	67%	60%

**Appendix Table 1.3.** Catch in numbers (reported) and in metric tons (estimated) of swordfish < 125 cm and number of hooks reported by pelagic longline vessels in year 2006-2008 and the average for years 1997-1999 by area Caribbean (CAR), Florida East coast (FEC), Gulf of Mexico (GOM), Mid Atlantic Bight (MAB), Northeast Central (NEC), Northeast Distant (NED), and South Atlantic Bight (SAB) and status of time/area closure.

		Number of SWO				Number of Hooks				Metric tons				Change in mt.		
		Mean	2006	2007	2008	Mean	2006	2007	2008	Mean	2006	2007	2008	2006	2007	2008
CAR	Open	433	58	48	73	235,268	72,934	32,650	80,570	6	0.7	0.8	0.8	-5	-5	-5
FEC	Closed	2,362	0	0	154	465,346	155,225	188,667	318,875	35	0.0	0.0	0.0	-35	-35	-33
FEC	Open	126	26	45	100	142,149	55,526	106,689	213,278	2	0.4	0.7	1.2	-1	-1	-1
GOM	Closed	1,019	5	10	7	234,433	3,020	5,250	5,510	10	0.0	0.1	0.1	-10	-10	-10
GOM	Open	787	1,639	2,229	1,927	2,588,096	2,247,385	2,392,489	1,919,486	8	15.6	18.3	20.7	8	11	13
MAB	Open	1,194	1,018	1,416	866	985,985	975,715	1,266,281	1,330,100	18	14.1	21.7	11.3	-3	4	-6
NEC	Closed	0	0	1	0	41,600	0	1,000	0	0	0.0	0.0	0.0	0	0	0
NEC	Open	760	157	154	685	726,550	376,399	313,296	520,002	11	2.2	2.4	8.9	-9	-8	-2
NED	Open	972	73	263	264	496,306	338,914	277,380	242,885	13	1.2	3.7	2.9	-11	-9	-10
SAB	Closed	935	3	26	50	214,186	1,420	6,947	15,122	15	0.1	0.4	0.7	-15	-15	-14
SAB	Open	1,459	1,060	1,552	1,559	371,310	403,595	593,542	651,541	23	17.7	25.3	22.2	-6	2	-1

**Appendix 2 Table 2.6a-SHK.** Estimates of commercial and recreational landings and dead discards for pelagic sharks in the U.S. Atlantic, Gulf of Mexico, and Caribbean.

	Commercial					Recreational			Discards			Total		
Year	mt (ww) <sup>1</sup>	mt (dw) <sup>2</sup>	lb (dw) <sup>3</sup>	av. weight <sup>4</sup>	number <sup>5</sup>	number <sup>6</sup>	av. weight <sup>7</sup>	lb (dw)	number	mt (ww)	lb (dw) <sup>8</sup>	number	lb (dw)	mt (ww)
1981						12,603	50.035	630,591				12,603	630,591	561
1982	45.41	23.17	51,077		1,354	20,015	50.996	1,020,685				21,369	1,071,762	953
1983	51.89	26.48	58,367		1,627	21,968	117.64	2,584,316				23,595	2,642,683	2,349
1984	49.12	25.06	55,250		1,538	23,295	67.489	1,572,156				24,833	1,627,406	1,447
1985	57.99	29.59	65,227		1,969	92,998	38.224	3,554,756				94,967	3,619,982	3,218
1986	68.50	34.95	77,049		2,385	42,572	65.631	2,794,043				44,957	2,871,091	2,553
1987	87.46	44.62	98,375		2,786	37,153	39.002	1,449,041	13,092	560.64	630,606	53,031	2,178,022	1,936
1988	129.48	66.06	145,639		3,915	32,993	41.271	1,361,654	13,655	468.74	527,237	50,563	2,034,530	1,809
1989	141.36	72.12	159,001		4,937	18,255	73.228	1,336,777	13,480	538.21	605,376	36,672	2,101,155	1,868
1990	102.74	52.42	115,566		3,274	11,630	41.246	479,691	13,955	795.97	895,300	28,859	1,490,557	1,325
1991	114.32	58.33	128,587		3,290	10,070	62.061	624,954	17,232	813.21	914,695	30,592	1,668,236	1,483
1992	139.81	71.33	157,258	34.896	4,111	16,304	39.219	639,427	8,939	298.31	335,538	29,354	1,132,222	1,007
1993	387.30	197.60	435,638	26.133	5,278	29,162	50.988	1,486,912	30,545	1191.52	1,340,217	64,985	3,262,767	2,901
1994	513.46	261.97	577,535	24.003	6,688	5,638	68.28	384,963	13,410	637.71	717,294	25,736	1,679,791	1,493
1995	393.93	200.98	720,219	39.054	18,442	32,673	47.629	1,556,182	10,864	710.27	798,909	61,979	3,075,310	2,734
1996	402.03	205.12	760,364	68.569	11,089	18,534	33.697	624,540	22,153	949.22	1,067,682	51,776	2,452,586	2,180
1997	381.08	194.43	739,486	35.926	20,584	8,743	54.834	479,414	7,754	250.42	281,671	37,081	1,500,571	1,334
1998	267.07	136.26	624,483	66.054	9,454	11,762	35.977	423,161	6,002	280.09	315,044	27,218	1,362,688	1,211
1999	113.10	57.70	376,471	40.925	9,199	11,122	48.304	537,237	3,464	117.63	132,310	23,785	1,046,018	930
2000	191.15	97.53	407,647	35.402	11,515	13,353	16.749	223,649	7,495	216.13	243,102	32,363	874,399	777
2001	193.58	98.77	411,574	18.746	21,955	3,777	83.938	317,034	6,158	155.75	175,187	31,890	903,795	804
2002	174.06	88.81	533,247	18.450	28,902	4,673	87.152	407,261	2,330	143.30	161,179	35,905	1,101,687	979
2003	155.55	79.36	641,044	19.911	32,195	4,282	35.88	153,638	1,239	108.13	121,624	37,716	916,306	815
2004	203.61	103.88	808,791	33.874	23,876	5,052	55.796	281,881	3,748	153.42	172,566	32,676	1,263,239	1,123
2005	194.87	99.42	408,650	46.239	8,838	5,392	31.204	168,252	2,260	130.99	147,337	16,490	724,239	644
2006	134.49	68.62	277,789	33.056	8,404	16,503	66.229	1,092,977	1,834	147.08	165,435	26,741	1,536,201	1,366
2007	219.60	112.04	378,974	37.355	10,145	9,000	38.975	350,775	4,276	120.94	136,033	23,421	865,782	770
2008	207.91	106.08	361,580	38.594	9,369	2,776	42.875	119,021	6,389	129.35	145,492	18,534	626,093	557

<sup>1</sup> In whole weight from weighout data sheets; <sup>2</sup> Whole weight to dressed weight conversion ratio is 1.96; <sup>3</sup> 1982-1994 data are from weighout data sheets, 1995-2008 data are the sum of the southeast quota monitoring program/southeast general canvass and the northeast general canvass/dealer weighout data; <sup>4</sup> In pounds dressed weight from the pelagic longline observer program; <sup>5</sup> 1982-1994 data are taken directly from weighout data sheets, 1995-2008 data obtained by dividing values in fourth column (lb dw) by those in fifth column (av. weight); <sup>6</sup> Almost all recreational landings are from the MRFSS survey; <sup>7</sup> In pounds dressed weight; <sup>8</sup> Whole weight to dressed weight conversion ratio is 1.96.

**Appendix 2 Table 2.6b-SHK.** Estimates of commercial and recreational landings and dead discards for blue sharks in the U.S. Atlantic, Gulf of Mexico, and Caribbean.

	Commercial					Recreational			Discards			Total		
Year	mt (ww) <sup>1</sup>	mt (dw) <sup>2</sup>	lb (dw) <sup>3</sup>	av. weight <sup>4</sup>	number <sup>5</sup>	number <sup>6</sup>	av. weight <sup>7</sup>	lb (dw)	number	mt (ww)	lb (dw) <sup>8</sup>	number	lb (dw)	mt (ww)
1981						4,925	45.435	223,765				4,925	223,765	199
1982	0.00	0.00	0		0	0	45.435	0				0	0	0
1983	0.00	0.00	0		0	14,593	45.435	663,027				14,593	663,027	589
1984	0.00	0.00	0		0	2,579	45.435	117,176				2,579	117,176	104
1985	0.00	0.00	0		0	11,621	33.003	383,528				11,621	383,528	341
1986	0.40	0.20	450		6	18,898	66.182	1,250,707				18,904	1,251,157	1,112
1987	0.00	0.00	0		0	20,683	47.545	983,373	12,506	526.20	591,868	33,189	1,575,241	1,400
1988	0.10	0.05	112		4	12,235	32.62	399,106	12,934	421.16	473,719	25,173	872,937	776
1989	0.00	0.00	0		0	7,419	41.011	304,261	12,525	480.00	539,902	19,944	844,163	751
1990	0.25	0.13	286		6	1,745	56.134	97,954	13,141	741.33	833,845	14,892	932,084	829
1991	0.00	0.00	0		0	6,643	52.12	346,233	16,562	772.32	868,702	23,205	1,214,936	1,080
1992	0.47	0.24	529	16.100	14	5,853	41.191	241,091	7,043	184.39	207,401	12,910	449,021	399
1993	7.88	4.02	8,860	16.100	85	14,114	53.567	756,045	29,329	1136.33	1,278,139	43,528	2,043,044	1,816
1994	7.82	3.99	8,796	15.600	105	507	45.435	23,035	11,986	572.24	643,653	12,598	675,485	601
1995	3.61	1.84	7,162	19.400	369	464	45.435	21,082	9,725	618.15	695,293	10,558	723,536	643
1996	5.40	2.76	24,005	44.400	541	9,150	34.070	311,741	18,996	710.69	799,381	28,687	1,135,127	1,009
1997	1.42	0.72	2,491	28.700	87	4,236	55.740	236,115	6,614	184.61	207,643	10,937	446,249	397
1998	2.87	1.46	3,925	47.100	83	6,085	45.435	276,469	5,295	195.25	219,616	11,463	500,011	445
1999	0.16	0.08	1,048	19.900	53	5,218	45.435	237,078	2,772	98.96	111,310	8,043	349,435	311
2000	0.61	0.31	4,124	11.700	352	7,011	45.435	318,542	6,298	137.19	154,311	13,661	476,977	424
2001	3.09	1.58	3,548	10.500	338	950	45.435	43,163	5,219	105.87	119,082	6,507	165,793	147
2002	0.20	0.10	228	14.400	16	0	45.435	0	1,472	54.46	61,261	1,488	61,489	55
2003	1.43	0.73	7,933	15.200	522	376	45.435	17,083	645	16.13	18,137	1,543	43,154	38
2004	6.96	3.55	7,834	18.248	429	0	45.435	0	2,717	49.12	55,250	3,146	63,084	56
2005	1.78	0.91	2,006	13.516	148	31	45.435	1,408	1,407	52.06	58,557	1,586	61,971	55
2006	1.70	0.87	2,506	18.561	135	980	45.435	44,526	438	4.82	5,422	1,553	52,453	47
2007	0.59	0.30	661	16.586	40	1,622	45.435	73,695	3,565	53.74	60,447	5,227	134,802	120
2008	7.74	3.95	10,820	18.080	598	117	45.435	5,316	6,389	129.35	145,492	7,104	161,628	144

<sup>1</sup> In whole weight from weighout data sheets; <sup>2</sup> Whole weight to dressed weight conversion ratio is 1.96; <sup>3</sup> 1982-1994 data are from weighout data sheets, 1995-2008 data are the sum of the southeast quota monitoring program/southeast general canvass and the northeast general canvass/dealer weighout data; <sup>4</sup> In pounds dressed weight from the pelagic longline observer program; <sup>5</sup> 1982-1994 data are taken directly from weighout data sheets, 1995-2008 data obtained by dividing values in fourth column (lb dw) by those in fifth column (av. weight); <sup>6</sup> Almost all recreational landings are from the MRFSS survey; <sup>7</sup> In pounds dressed weight; <sup>8</sup> Whole weight to dressed weight conversion ratio is 1.96.

**Appendix 2 Table 2.6c-SHK.** Estimates of commercial and recreational landings and dead discards for shortfin makos in the U.S. Atlantic, Gulf of Mexico, and Caribbean.

	Commercial					Recreational			Discards			Total		
Year	mt (ww) <sup>1</sup>	mt (dw) <sup>2</sup>	lb (dw) <sup>3</sup>	av. weight <sup>4</sup>	number <sup>5</sup>	number <sup>6</sup>	av. weight <sup>7</sup>	lb (dw)	number	mt (ww)	lb (dw) <sup>8</sup>	number	lb (dw)	mt (ww)
1981						7,678	56.395	433,001				7,678	433,001	385
1982						13,522	50.996	689,568				13,522	689,568	613
1983						7,375	51.597	380,529				7,375	380,529	338
1984						15,474	67.531	1,044,975				15,474	1,044,975	929
1985						79,912	41.487	3,315,309				79,912	3,315,309	2,947
1986						20,792	70.107	1,457,665				20,792	1,457,665	1,296
1987						14,809	35.069	519,337			0	14,809	519,337	462
1988						19,998	44.693	893,771			0	19,998	893,771	795
1989						8,367	90.117	754,009			0	8,367	754,009	670
1990						8,509	35.483	301,925			0	8,509	301,925	268
1991						3,422	69.02	236,186			0	3,422	236,186	210
1992				64.400	3,782	8,382	33.589	281,543	437	25.57	28,761	12,601	310,304	276
1993	281.09	143.41	316,164	35.800	4,044	15,034	49.883	749,941	460	19.85	22,327	19,538	1,088,432	968
1994	324.66	165.64	365,177	39.100	4,623	4,496	79.296	356,515	487	18.03	20,280	9,606	741,972	660
1995	288.83	147.36	460,767	52.700	8,743	31,212	51.227	1,598,897	446	28.44	31,989	40,401	2,091,653	1,860
1996	238.05	121.46	427,020	87.000	4,908	8,618	30.265	260,824	0	0.00	0	13,526	687,844	612
1997	245.46	125.23	446,305	44.000	10,143	3,025	60.839	184,038	0	0.00	0	13,168	630,343	560
1998	199.76	101.92	401,491	72.600	5,530	5,633	29.590	166,680	0	0.00	0	11,163	568,171	505
1999	90.05	45.94	217,867	47.000	4,635	1,383	51.597	71,359	0	0.00	0	6,018	289,226	257
2000	166.74	85.07	286,764	44.200	6,488	5,813	51.597	299,934	0	0.00	0	12,301	586,698	522
2001	182.02	92.87	347,844	50.700	6,861	2,827	83.938	237,293	0	0.00	0	9,688	585,137	520
2002	165.59	84.48	314,736	38.900	8,091	3,206	87.152	279,409	0	0.00	0	11,297	594,145	528
2003	140.80	71.84	285,222	40.000	7,131	3,906	35.880	140,147	0	0.00	0	11,037	425,369	378
2004	188.31	96.07	392,628	40.023	9,810	5,052	55.796	281,881	0	0.00	0	14,862	674,509	600
2005	186.03	94.91	343,286	61.576	5,575	3,857	31.204	120,354	0	0.00	0	9,432	463,640	412
2006	129.67	66.16	232,896	37.556	6,201	3,352	53.232	178,434	0	0.00	0	9,553	411,330	366
2007	216.09	110.25	355,118	47.920	7,411	2,556	38.975	99,620	0	0.00	0	9,967	454,738	404
2008	185.25	94.52	289,898	50.713	5,716	1,904	48.318	91,997	0	1.00	1,125	7,620	383,020	341

<sup>1</sup> In whole weight from weighout data sheets; <sup>2</sup> Whole weight to dressed weight conversion ratio is 1.96; <sup>3</sup> 1982-1994 data are from weighout data sheets, 1995-2008 data are the sum of the southeast quota monitoring program/southeast general canvass and the northeast general canvass/dealer weighout data; <sup>4</sup> In pounds dressed weight from the pelagic longline observer program; <sup>5</sup> 1982-1994 data are taken directly from weighout data sheets, 1995-2008 data obtained by dividing values in fourth column (lb dw) by those in fifth column (av. weight); <sup>6</sup> Almost all recreational landings are from the MRFSS survey; <sup>7</sup> In pounds dressed weight; <sup>8</sup> Whole weight to dressed weight conversion ratio is 1.96.

## APPENDIX 3

### THE U.S. NATIONAL PLAN OF ACTION FOR REDUCING THE INCIDENTAL CATCH OF SEABIRDS IN LONGLINE FISHERIES (NPOA): ITS IMPLEMENTATION IN THE U.S. ATLANTIC TUNA, SWORDFISH, AND SHARK LONGLINE FISHERIES

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#### **ICCAT Resolution on Incidental Mortality of Seabirds**

Seabirds are among several taxa of non-target marine species caught incidentally in longline fisheries. Reported catches by observers have generated concern over possible long-term ecological effects of longline operations in many parts of the world's oceans. Incidental catches of non-target species of seabirds with low population numbers could contribute to further declines in populations that have already experienced declines due to habitat loss, disturbance at nesting sites, pollution, marine debris, disease, and shifting patterns of food availability. Losses of seabirds in the Western-Central North Atlantic could occur without notice despite monitoring efforts because population numbers of some species are so low, seabird catches are such rare events that they both escape notice and defy statistical treatment, and species identifications have, until recently, have been poor.

ICCAT adopted Resolution 02-14 on Incidental Mortality of Seabirds at its 2002 annual meeting. This resolution urges parties to inform the Commission and its Standing Committee on Research and Statistics (SCRS) on the status of their National Plans of Action for Reducing Incidental Catches of Seabirds in Longline Fisheries (NPOA-Seabirds) and to implement such plans, where appropriate. The resolution encourages parties to collect and provide to SCRS all available information on interactions with seabirds, including incidental catches in all fisheries under the ICCAT purview. The resolution called for an assessment, by SCRS, of the impact of incidental catch of seabirds resulting from the activities of all the vessels fishing for tunas and tuna-like species in the Convention Area. The ICCAT website at <http://www.iccat.es/> provides additional information and a copy of the resolution.

The *International Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries* (IPOA-S) applies to "States" (hereafter Countries) in whose waters longline fishing is being conducted by their own or foreign vessels, and to Countries that conduct longline fishing on the high seas and in the exclusive economic zones (EEZs) of other Countries. The IPOA-S calls on Countries to voluntarily: (1) assess the degree of seabird bycatch in their longline fisheries; (2) develop individual national plans of action to reduce seabird bycatch in longline fisheries that have a seabird bycatch problem; and (3) develop a course of future research and action to reduce seabird bycatch. The IPOA-S calls for each Country to develop and implement a national plan consistent with the FAO *Code of Conduct for Responsible Fisheries* (FAO 1999) and all applicable rules of international law, and in conjunction with relevant international organizations.

At its 2007 annual meeting, ICCAT adopted Recommendation 07/07, which requires that longline vessels operating south of 20° South employtori (bird scaring) lines during fishing operations. In the case of vessels fishing for

swordfish with monofilament fishing anywhere within the Convention area, a combination of night-setting and weighted-branch lines is required. General specifications for each of the three mitigation measures are provided within the Recommendation, including general guidelines for the design and deployment of tori lines within Annex 1 of the Recommendation. The Recommendation is considered provisional pending review and adjustment in light of future available scientific advice, and particularly states that it will be reviewed based upon the seabird assessment underway at the time of the Recommendation's adoption.

The assessment of the impact of fisheries on seabirds that was requested in the Resolution has now been undertaken by the SCRS Sub-committee on Ecosystems, using information on seabird bycatch submitted by the various member Countries and other information that can be gathered on seabird population numbers and population dynamics to be organized in an ecological risk assessment framework.

### **NPOA-Seabird Executive Summary**

The United States voluntarily developed the U.S. *National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries* (NPOA-S) in a collaborative effort between the National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service (FWS) and the Department of State (DOS), carried out in large part by the Interagency Seabird Working Group (ISWG) consisting of representatives from those three agencies. All three agencies have management authorities covering seabird interactions with longline fisheries. NMFS manages U.S. fisheries under the authority of the Magnuson-Stevens Fishery Conservation and Management Act and the High Seas Fishing Compliance Act. FWS manages birds predominately under the authority of the Endangered Species Act and the Migratory Bird Treaty Act. DOS has the lead role in international negotiations on fisheries conservation and management issues. The collaborative effort between NMFS and FWS on development of the U.S. NPOA has increased communication between seabird specialists and fishery managers, which is viewed as a high priority for both agencies.

The NPOA-S contains the following themes:

1.) Action Items: NMFS, with the assistance of the Regional Fishery Management Councils (Councils), the NMFS Regional Science Centers, and FWS, as appropriate, should conduct the following activities:

- Detailed assessments of its longline fisheries for seabird bycatch within 2 years of the adoption of the NPOA-S;
- If a problem is found to exist within a longline fishery, measures to reduce this seabird bycatch should be implemented within 2 years. These measures should include data collection, prescription of mitigation measures, research and development of mitigation measures and methods, and outreach, education, and training about seabird bycatch; and
- *In collaboration with the appropriate Councils and in consultation with FWS, prepare an annual report on the status of seabird mortality for each longline fishery, including assessment information, mitigation measures, and research efforts. FWS will also provide regionally-based seabird population status information that will be included in the annual reports.*

2.) Interagency Cooperation: The continuation, wherever possible, of the ongoing cooperative efforts between NMFS and FWS on seabird bycatch issues and research.

3.) International Cooperation: The United States' commitment, through the DOS, NMFS and FWS, to advocate the development of National Plans of Action within relevant international forums.

In development of the NPOA-S, the agencies recognized that all U.S. longline fisheries have unique characteristics and that the solution to seabird bycatch issues will likely require a multi-faceted approach requiring different fishing techniques, the use of mitigating equipment, and education within the affected fisheries. The NPOA-S does not prescribe specific mitigation measures for each longline fishery; rather, the NPOA-S provides a framework of actions that NMFS, FWS, and the Councils, as appropriate, should undertake for each longline fishery. By working cooperatively, fishermen, managers, scientists, and the public may use this national framework to achieve a balanced solution to the seabird bycatch problem and thereby promote sustainable use of our nation's marine resources.



Detailed assessments should address the following:

- Criteria used to evaluate the need for seabird bycatch mitigation and management measures
- Longline fishing fleet data (numbers and characteristics of vessels)
- Fishing techniques data (demersal, pelagic, and other pertinent technical information)
- Fishing areas (by season and geographic location)
- Fishing effort data (seasons, species, catch, number of sets, and number of hooks/year/fishery)
- Status of seabird populations in the fishing areas, if known
- Estimated total annual seabird species-specific catch and catch-per-unit-effort (number/1,000 hooks set/species/fishery)
- Existing area and species-specific seabird bycatch mitigation measures and their effectiveness in reducing seabird bycatch
- Efforts to monitor seabird bycatch (e.g., observer program and logbooks), and
- Statement of conclusions and decision to develop and implement mitigation measures as needed.

NOAA Fisheries developed a report entitled “Evaluating Bycatch: A National Approach to Standardized Bycatch Monitoring Programs.” Published in 2004 as NOAA Technical Memorandum NMFS-F/SPO-66 (NMFS 2004), it was an initial effort toward meeting the above objectives. Researchers at NMFS and universities continue to work toward further improvements in bycatch estimation methods.

The United States included information on the seabird bycatch of the U.S. pelagic longline fishery in the Western North Atlantic in its National Reports to ICCAT in 2004 through 2007. The present report is an update of this information.

### ***Progress in FY 2009***

#### **1) Interagency:**

NOAA representatives attended the third Birds-At-Sea Meeting of the Northwest Atlantic Marine Bird Conservation Cooperative in Charleston in 2009 February 2-3. A multiagency action plan developed at the first workshop was updated. As was the case with the previous two workshops, this workshop focused on seabirds in their marine environment. Fishery Bycatch, Oil Spills, Distribution and Abundance, and Individual Tracking were the main workshop topics. The bycatch subgroup, led by a NOAA representative, continued to develop an action plan that focused on the following categories: a) improved and more extensive data analysis to estimate bycatch and identify fishing practices and bird characteristics that influence seabird bycatch; b) improved information obtained by observers, including more specific and accurate identification of the bird taxa caught; c) collection of information on bird bycatch throughout the world, (d) acquisition of population assessments and other key information about WNA seabirds, and e improved coordination between fishery managers and bird managers. Other elements in the bycatch action plan are development of a “summary threat assessment” for the Atlantic coast; outreach, education, and cooperation with stakeholders; bycatch reduction; increased observer coverage in hotspots such as the Outer Banks of North Carolina. Because of its high seabird diversity (the presence of 49 species has been documented), this area has been nominated as a globally Important Bird Area (IBA).

NOAA Fisheries convened a seabird workshop 2009 September 9-11 in Seattle entitled “Building a National Plan for NMFS to Improve the State of Knowledge and Reduce Fisheries Impacts on Seabirds. In addition to NMFS participants, attendees included top seabird experts from the U.S. Fish and Wildlife Service. The objective of this workshop was to prepare a seabird implementation plan at both the national and regional levels that can be used to (1) discuss NMFS seabird activities and important partnerships with management entities including the U.S. Fish and Wildlife Service, (2) guide NMFS management and science, and (3) provide input to the NMFS long-term planning and budget process. The NMFS National Seabird Program (NSP) was funded for the first time in FY04 and its funding has not grown in step with new mandates, including those found in the latest MSA reauthorization. The September workshop examined five themes that will inform the seabird implementation plan:

1. Pelagic seabird abundance and distribution and overlap with NMFS fisheries
2. Anthropogenic impacts (e.g. bycatch) and mitigation
3. Governance and management

4. Ecosystem approaches and seabirds as indicators of marine health
5. International aspects and needs

Working groups were formed to address key questions that will assist in the development of both a national and regional NMFS seabird plans, including consideration of international activities as integral to the conservation of seabird species whose ranges cross political boundaries. A workshop report will be produced as a NMFS technical memorandum and will subsequently be used for management and budgeting purposes.

## 2) International: Atlantic bird assessment by the ICCAT SCRS-subcommittee on ecosystems.

A third meeting of the ICCAT sub-committee on ecosystems, focused on seabirds interacting with fisheries and the results of the seabird risk assessment, in part funded by the United States. The meeting was held in Brazil in June 2009 and was attended by two scientists from the United States. CSIRO scientists presented results, for several species, of three indices formulated for assessing risk to seabird species from fishing in the ICCAT area. The three indices are 1) percent seabird distribution within the ICCAT area, by month, which reflects the percentage seabird distribution in which ICCAT longline fishing effort occurs; 2) for each 5x5 grid square, the percent seabird distribution multiplied by number of hooks, by month; and 3) percent ICCAT longline fishing effort that overlaps with each seabird species distribution, by month. The latter two indices reflect the relative intensity of potential interaction of birds with the fishery. Plans are to calculate one or more of these indices for 23 species--mainly species from the South Atlantic, where there is more data (rather than the North Atlantic and Mediterranean). Results for a few examples were provided. Species represented included Tristan and Atlantic-yellow-nosed albatrosses, (Tristan and Indian Ocean populations), sooty albatrosses (Gough Island populations), Cory's shearwater, and Cape gannet.

Although the assessment would have benefited from additional data regarding observed seabird interactions within ICCAT fisheries, the SCRS sub-committee on ecosystems concluded that ICCAT fisheries may be having some measureable impact on seabird populations. The sub-committee further noted that the simultaneous use of multiple bycatch mitigation measures is most effective at reducing seabird bycatch and indicated some examples of which measures were considered to be cost-effective, safe, and which had minimal impact on the catch rate of target species. Among other recommendations, the sub-committee indicated additional research on certain mitigation measures and thattori lines be required among any combination of required mitigation measures. The sub-committee went onto recommend that a combination of mitigation measures should be considered for use throughout the Convention area until such time as it can be demonstrated via direct observation that these fisheries are not having a significant adverse impact on seabird populations.

## **Bycatch of Seabirds in Atlantic Tuna, Swordfish, and Shark Longline Fisheries**

The Highly migratory species (HMS) are managed by the Secretary of Commerce under the Fishery Management Plan for Atlantic Tunas, Swordfish, and Sharks. The HMS FMP includes five Atlantic tuna species (bluefin, yellowfin, albacore, bigeye, and skipjack), swordfish, and 39 species of sharks in the Atlantic Ocean, Gulf of Mexico, and Caribbean Sea.

### **Description of the Fisheries**

Longline fisheries for Atlantic HMS species include the pelagic longline fishery for Atlantic tunas and swordfish, the bottom longline fishery for sharks, and the bottom longline fishery for grouper, snapper, and tilefish. One could argue whether there are one or two fisheries, because there is overlap in vessels. The pelagic longline fishery operates in several parts of the Western North Atlantic, whereas the bottom longline fisheries are mainly coastal. The bottom longline fisheries are active in the Atlantic Ocean from about the Mid-Atlantic Bight to south Florida and on the Gulf of Mexico continental shelf. Observer programs for these fisheries are managed by the Southeast Fisheries Science Center. The Miami, Florida, Laboratory coordinates the pelagic observer program (POP), and the observer program that covers the bottom longline fisheries operates out of the Panama City, Florida, Laboratory.

The main target of the shark bottom longline fishery is large coastal sharks, but small coastal sharks, pelagic sharks, and dogfish species are also caught. The main target of the reef fish bottom longline fishery is grouper and tilefish. Hale and Carlson (2007) reported that out of 250 vessels that possess directed shark fishing permits, only about 100

were active in this fishery.

Observations of the bycatch of the Atlantic shark-directed bottom longline fishery started in 1994 and were conducted by the Commercial Shark Fishery Observer Program, Florida Museum of Natural History, University of Florida, Gainesville. Responsibility for the program was transferred to National Marine Fisheries Service, Southeast Fisheries Science Center, Panama City Laboratory (Florida) beginning in the 2<sup>nd</sup> trimester season of 2005. All vessels that have an active directed shark permit and fish with bottom longline gear are selected for coverage. Consequently, observers also board trips that target a combination of shark and grouper, and shark and tilefish. Observers reported four seabirds captured incidentally in the bottom longline fisheries in 2008: two dead brown pelicans, one dead herring gull, and one skeleton that could not be identified.

The National Marine Fisheries Service ordered a 6-month emergency closure, effective 16 May 2009, of the bottom longline fishery in the Gulf of Mexico, out to 85° 30' W while the issue of how to manage the fishery to protect sea turtles was addressed. On 14 August 2009, the Gulf of Mexico Fishery Management Council voted on a measure to close all bottom longline fishing shoreward of 35 fathoms (~64 meters) from June to August and to restrict longline fishing of all vessels that have a history of catching at least 40,000 lbs of reef fish each year. The Council also established a per vessel limit of 1,000 hooks on board during any fishing trip and 750 hooks rigged for fishing at any time. The Council decision was forwarded to the National Marine Fisheries Service for management attention.

U.S. Atlantic pelagic longline fishing occurs throughout the Gulf of Mexico, along the entire U.S. Atlantic coast over the continental shelf and slope, and in distant water areas, including the central North Atlantic, the Canadian Grand Banks, and parts of the Caribbean Sea. Figure 1 shows the fishing areas used for entering the pelagic longline logbook and observer data. The Pelagic Observer Program (POP) at the Miami Laboratory began in May of 1992. The POP, with a corps of approximately 10-12 observers under contract, monitors a mobile U.S. pelagic longline fleet ranging from the Grand Banks to off Brazil and in the Gulf of Mexico. Figure 2 (from Winter et al. 2009) shows covering by observers 1992-2007. Additional observers are contracted for special intensive coverage of selected areas for relatively short time periods (i.e., annual or less). These special projects are referred to as experiments. The pelagic observer program (POP) was designed to address assessment issues regarding target and non-target fish species, and has also been used to obtain estimates of the bycatch of sea turtles and marine mammals (Garrison 2005). The observed incidental take of seabirds has been recorded since POP inception, but estimates of the fleet bycatch based on observed bird bycatch started only recently. From 1992 through 2007, NMFS observer coverage (by number of sets) of the pelagic longline fishery has been about 8% overall.

Observers have been receiving training in seabird identification since 2005 whenever training opportunities were called for new observers. One training session involving 39 observers was conducted in 2008. Line drawings of life-sized head profiles, as well as photos, colored pictures, and mounted birds borrowed from museums are used in the training. Observers are provided with the Atlantic Beached Bird Guide and the National Geographic North American Bird Guide. A bycatch form requiring information specific to birds was introduced into the POP in January 2007 for use in recording data on each bird caught and has been used since that time. A data entry form has been developed for entry of data from the bird form into an ACCESS database. Observers also are asked to photograph birds that are caught so that identifications can be confirmed by an expert. Fishermen are required to submit logbooks for every trip and are supposed to record other bycatch, but reporting of the seabird bycatch in logbooks is not required.

The longline observer programs operated by the Southeast Fisheries Science Center have a consistent data collection protocol. The observer completes three data forms: Longline Gear Characteristic Log, Longline Haul Log, and Individual Animal Log. The Longline Gear Characteristic Log is used to record, for example, the type and length of mainline used, number and length of gangions, and make and model of hook. The Longline Haul Log is used to record the length, location, time, and duration for each set and haul-back, as well as environmental information and the type(s) of bait used. The Individual Animal Log records all species caught, condition of the catch (e.g. alive, dead, damaged, or unknown) when brought to the vessel, and final disposition of the catch (e.g. kept, released, finned, etc.). When an animal is brought onboard the vessel, the observer records the species identification, sex (sharks only), and length information. If a protected resource (e.g. seabird, sea turtle, or marine mammal) is encountered, the observer is required to fill out additional form(s). If any species identification is questionable, the observer is instructed to take several digital pictures of the specimen for further review by SEFSC staff or contracted experts. Observers are contract staff. Data are submitted to SEFSC on a per trip basis, entered and reviewed by

SEFSC staff, and reviewed with contract observer staff to resolve any questions.

## **U.S. Seabird Bycatch Assessment.**

### *Atlantic pelagic longline fishery*

From 1992 through 2008, a total of 142 seabird interactions were observed, with 101 seabirds (71.13 percent) observed killed, in the Western North Atlantic pelagic longline fishery. A total of 121 U.S. pelagic longline vessels operated in the Atlantic Ocean, Gulf of Mexico, and Caribbean Sea in 2008. Total logbook effort has been lower in recent years (1992-2008) than it was previously (1986-1991), however total logbook effort increased from 2006 to 2008, reaching 1,400 trips and 8,862 sets.

Observed bycatch has ranged from 1 to 18 seabirds observed dead per year and 0 to 15 seabirds observed released alive per year from 1992 through 2008 (Table 1). A total of 142 seabird interactions were observed in the Atlantic pelagic longline fishery from 1992 through 2008. One seabird, a brown pelican, was captured in 2008 and was released alive. In 2007, six great black-backed gulls were caught, and all of them were dead. All six were caught on the same trip on five sets. Through 2004, almost half of the seabirds observed (58) were not identified; however, beginning in 2005, observers have provided species identification on all seabirds caught. Of those seabirds identified at least to family level, gulls represent the largest group (42), followed by shearwaters (32) (Table 2). Of those identified to species, there were 28 greater shearwaters, 8 northern gannets, 10 great black-backed gulls, 8 herring gulls, and 1 brown pelican. The shearwater taxa experienced the highest mortality (87.5 percent), followed by gulls (76.2 percent). Northern gannets had the lowest mortality rate (12.5 percent).

Regionally, the highest number of birds caught was in the Mid-Atlantic Bight (MAB), followed by the Northeast Coastal Area (NEC) (Table 3). Fewer birds were observed caught in Northeast Distant (NED) and the South Atlantic Bight (SAB), but mortality rates were higher in the SAB than in any other region. Fifteen of the 29 NED birds were reported caught in a special experimental program in which observers covered 100% of the pelagic longline effort. Seabird catches have been extremely low in the Gulf of Mexico (GOM) (although the brown pelican reported by observers in 2008 was caught in the GOM). Seabird catches have never been observed in the Caribbean (CAR), Florida East Coast (FEC), North-Central Atlantic (NCA), Sargasso Sea (SAR), Tuna-North (TUN), or Tuna-South (TUS) regions. The FEC has been closed to pelagic longline fishing since March, 2001; however vessels participating in experiments are allowed to operate in the area under special research permits.

The distribution of effort among regions, as percent of total effort, varied somewhat between the two periods, 1986-1991 and 1992-2008, the percent in CAR and FEC declining and the percent in GOM, MAB, and SAB increasing (Table 4). The percent of effort in NCA, SAR, TUN, and TUS has always been low. The decline in percent effort in the FEC from the earlier to the later period was due to the closure of the FEC to longline effort beginning in March 2001.

Observer coverage, shown for 1992-2008 only (Table 5), is unevenly distributed across regions relative to longline effort, ranging from 7.23% in the NEC to 2.40% in the TUS. In the five areas where seabirds have been caught, the observer coverage for 1992-2008 has varied from 4.39 percent (in the NEC) to 15.19 percent (in the NED). The coverage in the NED would be 5.69 percent if the 2001-2003 experiment were excluded. Thus the rate of seabird catches reported (Table 6) could potentially be affected not only by the distribution of seabirds relative to longline effort but also by the distribution of observer effort relative to longline effort.

In a collaboration with Virginia Polytechnic Institute (Yan Jiao and Andreas Winter), an analysis was conducted to explore the potential for reducing uncertainty in estimations of annual fishery bird bycatch for the period 1992-2007 by combining other statistical techniques with the delta-log normal approach previously applied to other bycatch species of the pelagic longline fishery by Yeung (1999) and others and to the bird bycatch by Hata (2007). Nine models were developed, as follows: 1) arithmetic mean; 2) geometric mean; 3) traditional delta log-normal; 4) generalized additive models (GAM); 5) generalized linear model (GLM) without spatial autocorrelation, but with geographic coordinates as factors; 6) GLM with spatial autocorrelation; GLM with spatio-temporal correlation; and the combination GAM/GLM. The delta model was done two ways, one with all the areas separated and the other with some of the areas combined to produce a total of six areas, as in Yeung (1999). Details of the various model structures are given in Winter et al. (2009).

Despite the good rationale for a distance-time relationship in the data and the promising semi-variograms (relationship of variance to distance) produced from the data for use in the autocorrelation models, these two models were excluded early in the process of reviewing results because of exceptionally large bycatch estimates and confidence ranges. The GAM model, likewise, had exceptionally high values for two of the years and was excluded.

Average annual and total 16-yr estimated fishery bycatch from the remaining models are shown in Figure 3. Annual estimates were made for all 16 years, using all of the POP and logbook data for the period 1992-2007 (Winter et al. 2009). The annual estimates were recalculated for these 16 years using data for the period 1992-2008 in order to also obtain an estimate for 2008 (A. Winter, pers. comm.). The average annual and total-period estimates based on 1992-2007 data and the estimates based on 1992-2008 data are similar. Annual and total-period estimates from the Arithmetic, GLM, and combination GAM/GLM models were very similar to each other. The estimates from the delta models were similar to each other but lower than the other two. The geometric model produced the lowest bycatch estimates. The pattern of variation across years was similar in annual estimates from the alternative models. As estimated, the seabird catch varied substantially among years and was highest in 1997 by all methods. The estimated catch was relatively low in 2005 and 2006. Estimates from the GLM model with geographic coordinates as factors are shown in Table 7.

Confidence limits, determined by bootstrap methods, were found to vary by year in all models, and the percent observer coverage of fishing effort (i.e., percent of total effort, as sets, observed) was a significant, negatively-related factor explaining the variation in the confidence range (Winter et al. 2009). This is not surprising and is important to note in view of the distribution of POP coverage among areas relative to the distribution of the observed bird bycatch among areas. Long-term, the highest percent of observed bird bycatch comes from the MAB (43.66 percent) followed by the NEC (30.28 percent) (Table 3), whereas the highest POP coverage of longline effort is in the NCA (6.74 percent), an area that has never had an observed bird bycatch, followed by the GOM (6.14 percent) (Table 5), an area with a very low percent of the observed bird bycatch (2.11 percent) (Table 3).

### **Current Seabird Mitigation Efforts**

Designation of the Cape Hatteras Special Research Area by the National Marine Fisheries Service, effective June 2009, because of concern for the overlap of high pelagic longline effort and high density of pilot whales may help improve information collected about seabird bycatch, although benefits will not be immediate because a research project for this area has not been initiated. Lee (1999) reported a high diversity of seabirds in the area along the shelf break off the Outer Banks of North Carolina, and the historic POP coverage of the area is low considering the high percentage of the total reported seabird bycatch from the general area (Figure 1 and Table 3).

There are no specific mitigation efforts regarding seabird bycatch in the U.S. Atlantic pelagic longline fisheries; however other management measures recently implemented to protect other species (Watson et al. 2005) also may provide protection for seabirds. Circle hooks became the required gear in summer 2004, replacing J-shaped hooks, which caught more turtles (Watson et al. 2005), and fewer birds may be caught on circle hooks than on J-shaped hooks (Hata 2007). Added weights may also reduce the bird bycatch (Hata 2007). Time/area closures for the pelagic longline fishery are in place in the Desoto Canyon area of GOM (since November 2000), in the FEC (since March 2001), in the Charleston Bump (seasonally, from February through April, since March 2001), in the NED, and in June in a strip off New Jersey in the MAB (since June 1999). In addition, there is a bottom longline time/area closure off North Carolina, effective from January-June, to protect juvenile and adult dusky sharks and juvenile sandbar sharks. Closures in areas of high use by birds may reduce opportunities for seabird interactions with the gear.

### **Conclusion**

Specific mitigation measures for seabirds are not proposed at this time for either the pelagic longline fishery or the bottom longline shark fishery because the estimated seabird bycatch is relatively small—averaging about 169 or 180 since 1992 by latest estimates. While seabird catches are rare events in the fishery, they may have significant impacts on birds belonging to the small populations that forage off the U.S. East Coast. Therefore, it is critically important to identify accurately the birds that are caught and to seek opportunities, in collaboration with other

bycatch programs, to increase the observer coverage of areas where most of the birds are caught. The SEFSC intends to continue its project to improve the seabird information reported by observers in both detail and accuracy. Progress has been made in exploring means of improving the statistical methods for estimating fleet bird bycatch from POP and logbook data.

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## **References Cited**

- Food and Agriculture Organization (FAO). 1999. International plan of action for reducing incidental catch of seabirds in longline fisheries. International plan of action for the conservation and management of sharks. International plan of action for the management of fishing capacity. Rome, FAO. 26 p.
- Garrison, L. P. 2005. Estimated bycatch of marine mammals and turtles in the Atlantic. NOAA Technical Memorandum NMFS-SEFSC-531. 57 pp.
- Hale, L. F. and J. K. Carlson. 2007. Characterization of the shark bottom longline fishery: 2005-2006. U.S. Department of Commerce, NOAA, NMFS, Southeast Fisheries Science Center, Panama City Laboratory, Panama City, FL. NOAA Technical Memorandum NMFS-SEFSC-554. 25 pp.
- Hata, D. N. 2007. Incidental capture of seabirds in the U.S. Atlantic pelagic longline fishery. Report to the Southeast Fisheries Science Center and the National Marine Fisheries Service Seabird Bycatch Program. 50 pp.
- Lee, D. S. 1999. Pelagic seabirds and the proposed exploration for fossil fuels off North Carolina: a test for conservation efforts of a vulnerable international resource. The Journal of the Elisha Mitchell Scientific Society 115:294-315.
- NMFS (National Marine Fisheries Service). 2004. Evaluating bycatch: a national approach to standardized bycatch monitoring programs. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-F/SPO-66. 108 pp. On-line version, <http://spo.nmfs.noaa.gov/tm>.
- Watson, J. W., S. P. Epperly, A. K. Shah, and D. G. Foster. 2005. Fishing methods to reduce sea turtle mortality associated with pelagic longlines. Can. J. Fish. Aquat. Sci. 62:965-981.
- Winter, A., Y. Jiao, and J. Browder. 2009. Modelling low rates of seabird bycatch in the U.S. Atlantic longline fishery. Draft report to the Southeast Fisheries Science Center and the National Marine Fisheries Service Seabird Bycatch Program.
- Yeung, C. 1999. Estimates of marine mammal and marine turtle bycatch by the U.S. pelagic longline fleet in 1998. NOAA Tech. Mem. NMFS-SEFSC-480. 29 pp.

**Table 1. Seabird Bycatch in the U.S. Atlantic Pelagic Longline Fishery, 1992-2008**

Source: NMFS Pelagic longline fishery observer program (POP).

Year	Type of Bird	Status	
		Alive	Dead
1992	Gull		4
1992	Greater Shearwater		2
1993	Black-backed Gull	1	3
1993	Gull	1	
1993	Northern Gannet	4	
1994	Herring Gull		7
1994	Gull		4
1994	Greater Shearwater		4
1995	Gull	1	
1995	Northern Gannet	2	
1995	Storm Petrel		1
1995	Seabird		6
1997	Seabird	15	18
1998	Seabird		8
1999	Seabird		1
2000	Laughing Gull	1	
2000	Northern Gannet		1
2001	Greater Shearwater		8
2001	Seabird		1
2002	Laughing Gull		1
2002	Gull	6	1
2002	Northern Gannet	1	
2002	Greater Shearwater	1	4
2002	Shearwater		2
2002	Seabird	3	2
2003	Seabird	1	2
2004	Gull		5
2004	Greater Shearwater	1	4
2004	Seabird		1
2005	Herring Gull		1
2005	Cory's Shearwater		1
2005	Greater Shearwater	1	1
2006	Greater Shearwater		2
2006	Shearwater	1	
2007	Great Black-backed Gull		6
2008	Brown pelican	1	
	Total	41	101

Note: This tabulation includes the 15 birds (5 alive, 10 dead) caught in the Northeast Distant (NED) Experiment, 2001-2003 (Watson et al. 2005).

**Table 2. Status of Seabird Bycatch in the U.S. Atlantic Pelagic Longline Fishery, 1992-2008.** Source: NMFS Pelagic longline fishery observer program (POP).

Species	Release Status		Total	Percent Dead
	Dead	Alive		
Greater shearwater	25	3	28	89.29
Cory's shearwater	1		1	100.00
Unidentified shearwater	2	1	3	66.67
Herring gull	8		8	100.00
Great black-backed gull	9	1	10	90.00
Laughing gull	1	1	2	50.00
Unidentified gull	14	8	22	63.64
Northern gannet	1	7	8	12.50
Storm petrel	1		1	100.00
Brown pelican		1	1	0
Unidentified seabird	39	19	58	67.24
Grand Total	101	41	142	71.63

Note: This table includes the 15 birds total, 10 dead) of the 2001-2003 NED Experiment (Watson et al. 2005).

**Table 3. Seabird bycatch in the U.S. Atlantic Pelagic Longline Fishery by area, 1992-2008.** Source: NMFS Pelagic longline fishery observer program (POP).

Region	All	Dead	Percent dead	Percent of observed bycatch
CAR	0	0		0.00
FEC	0	0		0.00
GOM	3	1	33.33	2.11
MAB	62	50	80.65	43.66
NCA	0	0		0.00
NEC	43	24	55.81	30.28
NED	17	12	70.59	11.97
SAB	17	14	82.35	11.97
SAR	0	0		0.00
TUN	0	0		0.00
TUS	0	0		0.00
Total	142	101	71.13	100.00

CAR – Caribbean, FEC – Florida East Coastal, GOM - Gulf of Mexico, MAB - Mid Atlantic Bight, NCA – North Central Atlantic, NEC – Northeast Coastal, SAB - South Atlantic Bight, NED - Northeast Distant, SAR – South Atlantic Bight, SAR – Sargasso Sea, TUN – Tuna-North, TUS – Tuna-South

Note: This table includes the 15 birds total, 10 dead) of the 2001-2003 NED Experiment (Watson et al. 2005).



**Table 4.** *Pelagic longline effort (number of sets), 1986-1991, 1992-2008, and total period, as number and percent in each region.*

Region	Number of sets		Percent of total	
	Period		Period	
	1986-1991	1992-2008	1986-1991	1992-2008
CAR	8,806	9,882	10.11	4.88
FEC	19,124	25,601	21.96	12.64
GOM	26,464	73,200	30.39	36.15
MAB	10,670	32,274	12.25	15.94
NCA	445	4,589	0.51	2.27
NEC	7,788	15,314	8.94	7.56
NED	6,928	10,629	7.96	5.25
SAB	5,395	22,524	6.20	11.12
SAR	308	2,001	0.35	0.99
TUN	582	2,487	0.67	1.23
TUS	174	1,456	0.20	0.72
UNK	397	2,551	0.46	1.26
Total	87,081	202,508	100.00	100.00

Note: This table includes the observed effort (1,225 sets) of the 2001-2003 NED Experiment (Watson et al. 2005)

**Table 5.** *Observer coverage in relation to pelagic longline effort (sets), by region, 1992-2008, without and with NED Experiment of 2001-2003, in which observers covered 100% of effort.*

Region	Logbook sets (w/o NED 2001-2003)	Observed sets		Logbook sets (incl NED 2001-2003)	Observed sets	
		Number	Percent		Number	Percent
CAR	10,065	281	2.79	10,065	281	2.79
FEC	25,235	953	3.78	25,235	953	3.78
GOM	73,632	4,522	6.14	73,632	4522	6.14
MAB	31,706	1,454	4.59	31,706	1454	4.59
NCA	4,897	330	6.74	4,897	330	6.74
NEC	15,269	693	4.54	15,269	693	4.54
NED	10,937	622	5.69	12,162	1847	15.19
SAB	22,308	980	4.39	22,308	980	4.39
SAR	1,946	112	5.76	1,946	112	5.76
TUN	2,377	77	3.24	2,377	77	3.24
TUS	1,491	35	2.35	1,491	35	2.35
UNK	2,551	0	0.00	2,551	0	0.00
Total	202,414	10,059	4.97	203,639	11284	5.54

Note: In the NED Experiment, 2001-2003, observers covered 100% of effort, 1,225 sets.

**Table 6. Observed seabird catch rate in the U.S. Atlantic pelagic longline fishery, 1992-2008 (excluding the NED experiment of 2001-2003, in which coverage was 100%, differing from the rest of Pelagic Observer Program).**

Year	Sets	Hooks	Number of seabirds		Number of occurrences		Catch rate	
			All	Dead	All	Dead	per set	per 1000 hooks
1992	329	194,706	6	6	1	1	0.018	0.031
1993	817	526,501	9	3	5	2	0.011	0.017
1994	650	411,996	15	15	6	6	0.023	0.036
1995	686	472,105	10	7	6	5	0.015	0.021
1996	356	220,223	0	0	0	0	0	0
1997	451	311,520	33	18	11	8	0.073	0.106
1998	287	175,408	8	8	2	2	0.028	0.046
1999	424	285,083	1	1	1	1	0.002	0.004
2000	465	312,574	2	1	2	1	0.004	0.006
2001	398	284,198	8	8	4	4	0.02	0.028
2002	344	260,632	8	2	5	2	0.023	0.031
2003	551	427,575	2	1	2	1	0.004	0.005
2004	702	524,182	11	10	6	5	0.016	0.021
2005	796	577,354	4	3	3	2	0.005	0.007
2006	568	419,233	3	2	3	2	0.005	0.007
2007	944	734,110	6	6	5	5	0.006	0.008
2008	1,291	922,557	1	0	1	0	0.001	0.001
Total	10,059	7,129,957	126	91	62	47	0.013	0.018

**Table 7.** Estimated seabird bycatch of the U.S. Atlantic pelagic longline fishery based on POP and longline data, 1992-2007 (Winter et al. 2009) and 1992-2008, using a general linear model with geographic coordinates as factors (A. Winter, pers. comm.).

Year	1992-2007 data			1992-2008 data
	est	95% CI	CV	est.
1992	49	(0, 224)	114.1	50
1993	170	(43, 7125)	1975.6	174
1994	222	(63, 453)	44.8	220
1995	279	(82, 695)	204.2	279
1996	0	(0, 0)	3182.7	0
1997	814	-	34.1	810
	144	3,501,437		
1998	144	(0, 431)	77.4	144
1999	73	(0, 250)	100.8	72
2000	88	(0, 240)	73.5	88
2001	236	(49, 508)	51.5	232
2002	320	(72, 627)	44.1	315
2003	73	(0, 184)	69.3	73
2004	195	(59, 378)	41.9	196
2005	31	(0, 104)	102.2	31
2006	54	(0, 125)	57.3	55
2007	133	(29, 253)	43.2	131
2008				21
Total	2881			2891

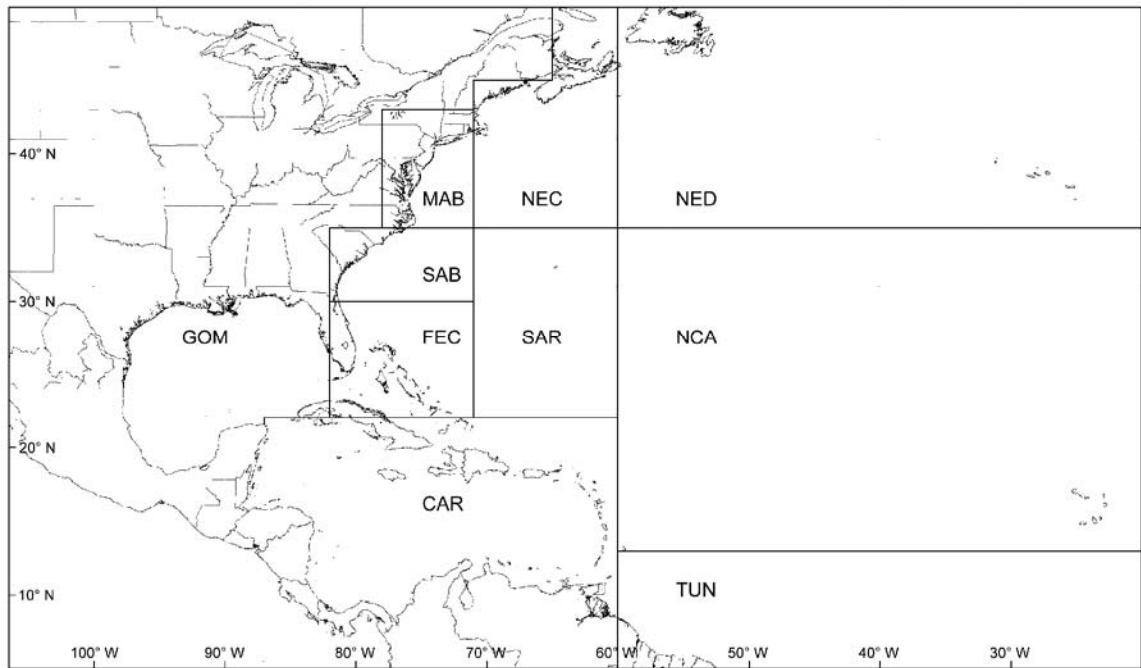


Figure 1. Map indicating National Marine Fisheries Service fishing regions used in analyses of pelagic longline data. The regions illustrated are: Caribbean (CAR), Gulf of Mexico (GOM), Florida East Coast (FEC), Middle Atlantic Bight (MAB), North-Central Atlantic (NCA), Northeast Coastal (NEC), Northeast Distant (NED), Sargasso Sea (SAR), South Atlantic Bight (SAB), and Tuna-North (TUN). The Tuna-South (TUS) region not depicted is south of the TUN.

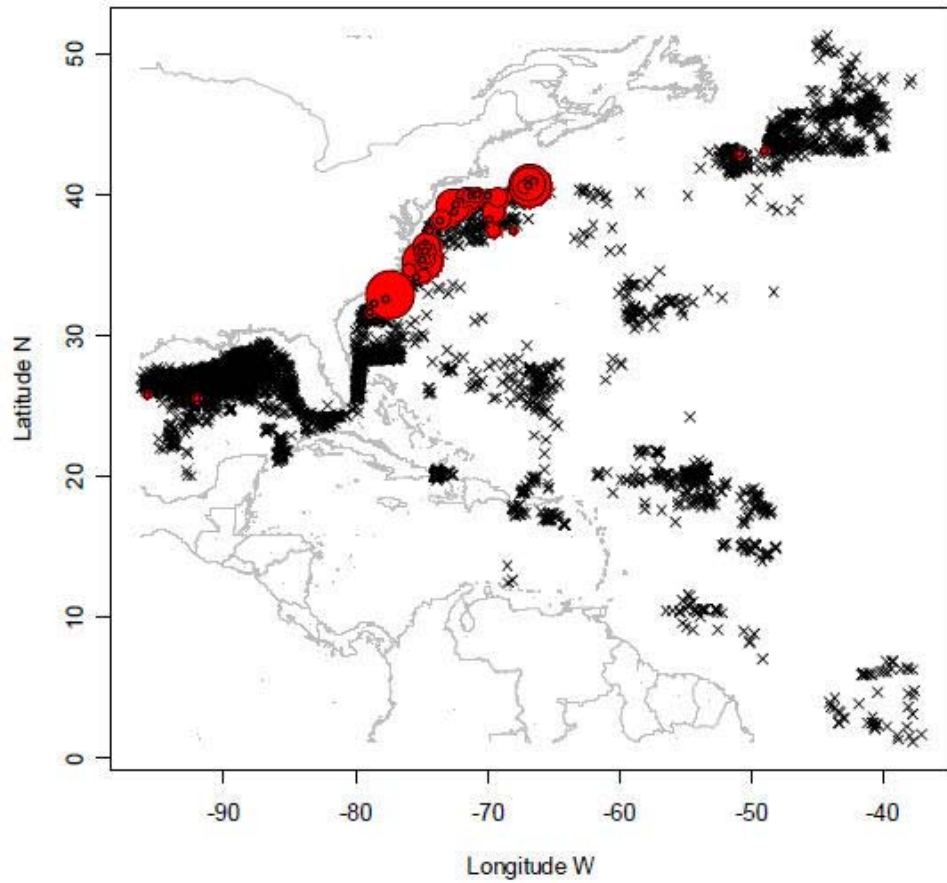
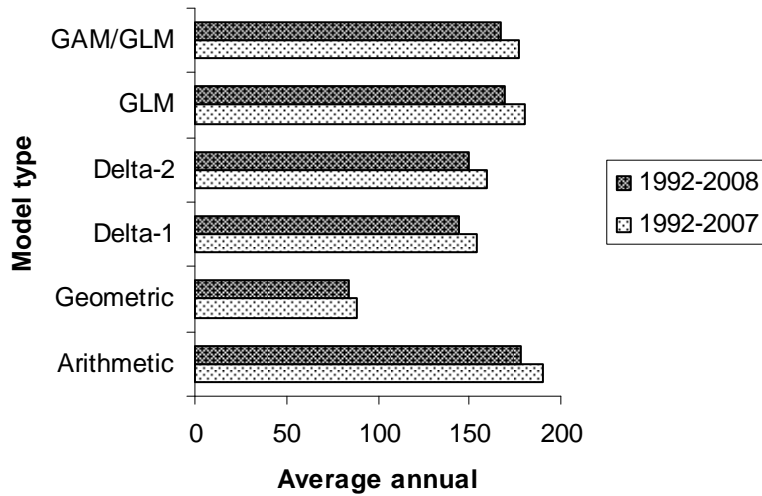


Figure 1. Spatial distribution of observed longline sets (black crosses) and seabird bycatch (red circles), 1992-2007. Red circles are scaled to the total number (all species) caught per single set (maximum = 9) (from Winter et al. 2009 draft).

A.



B.

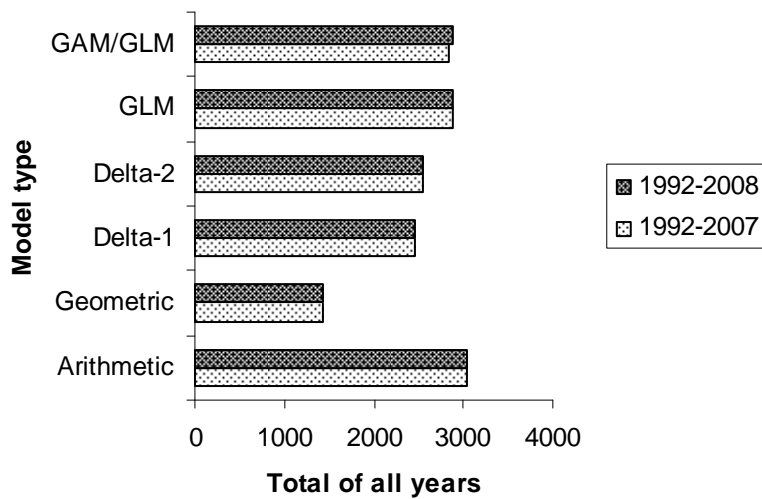


Figure 3. Estimated average annual seabird bycatch (A) and total (1992-2007 or 1992-2008) (B), from six models, from Winter et al. (2009 draft).

## References Cited

- Food and Agriculture Organization (FAO). 1999. International plan of action for reducing incidental catch of seabirds in longline fisheries. International plan of action for the conservation and management of sharks. International plan of action for the management of fishing capacity. Rome, FAO. 26 p.
- Garrison, L. P. 2005. Estimated bycatch of marine mammals and turtles in the Atlantic. NOAA Technical Memorandum NMFS-SEFSC-531. 57 pp.
- Hale, L. F. and J. K. Carlson. 2007. Characterization of the shark bottom longline fishery: 2005-2006. U.S. Department of Commerce, NOAA, NMFS, Southeast Fisheries Science Center, Panama City Laboratory, Panama City, FL. NOAA Technical Memorandum NMFS-SEFSC-554. 25 pp.
- Lee, D. S. 1999. Pelagic seabirds and the proposed exploration for fossil fuels off North Carolina: a test for conservation efforts of a vulnerable international resources. *Journal of the Elisha Mitchell Scientific Society* 115:294-315.
- NMFS (National Marine Fisheries Service). 2004. Evaluating bycatch: a national approach to standardized bycatch monitoring programs. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-F/SPO-66. 108 pp. On-line version, <http://spo.nmfs.noaa.gov/tm>.
- Watson, J. W., S. P. Epperly, A. K. Shah, and D. G. Foster. 2005. Fishing methods to reduce sea turtle mortality associated with pelagic longlines. *Can. J. Fish. Aquat. Sci.* 62:965-981.
- Winter, A., Y. Jiao, and J. Browder. 2009. Modelling low rates of seabird bycatch in the U.S. Atlantic longline fishery. Draft report to the Southeast Fisheries Science Center and the National Marine Fisheries Service Seabird Bycatch Program.
- Yeung, C. 1999. Estimates of marine mammal and marine turtle bycatch by the U.S. pelagic longline fleet in 1998. NOAA Tech. Mem. NMFS-SEFSC-480. 29 pp.

#### APPENDIX 4

##### ANNUAL REPORTING OF IMPLEMENTATION OF THE ICCAT MANAGEMENT STANDARD FOR LARGE-SCALE TUNA LONGLINE VESSELS

REPORTING FLAG: United States	YEAR: 2009
REPORTING AGENCY: National Marine Fishery Service	PERSON IN CHARGE Russell Dunn
ADDRESS: 263 13th Avenue South, St Petersburg, FL, USA 33701	TEL: 001. 727.824.5399 FAX: 001. 727.824.5398 EMAIL: russell.dunn@noaa.gov

##### a Management in the fishing grounds

	<i>Surveillance &amp; at-sea inspection by patrol boats</i>	<i>Scientific Observer boarding</i>	<i>Satellite-based vessel monitoring system by management areas</i>	<i>Tags to differentiate catches by management areas</i>	<i>Real time catch report</i>	<i>Entry/Exit report</i>
Yes, No	YES	YES	YES	YES	No	YES
Note	1140 boats (<65 feet) 148 cutters (>65 feet) 1288 total	13.5% (of sets)	100% of pelagic longline vessels fishing for Atlantic highly migratory species	Bluefin Tuna		Vessel Logbook Program
Total number of patrol days at fishing grounds	2319.5 cutter days in support of domestic fisheries within U.S. Atlantic and Gulf of Mexico EEZ					

##### b Management of transshipment (from the fishing grounds to the landing ports)

	<i>Transshipment report</i>	<i>Port inspection</i>	<i>Statistical document program</i>
Yes, No	NO	YES	YES
Note	Transshipment Prohibited	Port inspection program not directly relevant to transshipment activities as transshipment is prohibited.	Bluefin Tuna Bigeye Tuna--frozen Swordfish

##### c. Management at landing ports

	<i>Landing inspection</i>	<i>Landing reporting</i>	<i>Cooperation with other Parties</i>
Yes, No	YES	YES	Yes
Note	Inspection programs for both enforcement and biological sampling/statistics purposes.	Vessel Logbook Dealer Reporting Program	



**APPENDIX 5**  
**NOAA ENFORCEMENT ACTIONS TAKEN**  
**ON ICCAT SPECIES**

**September 1, 2008 – August 31, 2009**

During this reporting period, enforcement efforts consisted of dockside monitoring of offloads at major landing facilities in conjunction with dealer record checks, as well as at-sea boardings and visits to a limited number of concerned recreational marinas. Enforcement officials detected the following violations:

<b>ENFORCEMENT ACTIONS</b>	<b>#</b>
CASES OPENED THIS REPORTING PERIOD	<b>77</b>
REMAINING OPEN	<b>58</b>
CASES COMPLETED WITH WARNINGS ISSUED	<b>19</b>

**VIOLATION**

**CASE NUMBER**

**General Requirements of the Atlantic Tunas Convention Act (ATCA) and Magnuson-Stevens Act (MSFCMA)** **15**

**General Prohibitions under the ATCA and MSFCMA to include:**

Fishing, catching, possessing, retaining Atlantic Highly Migratory Species (HMS) without a valid permit **15**

Purchase, receipt, transfer, or attempts to do so, for commercial purposes, Atlantic HMS landed by non-permitted vessels, or without a valid dealer permit **2**

Sale, transfer or attempted sale or transfer of Atlantic tuna, shark or swordfish to other than a permitted dealer **4**

Fail to possess a permit on board the permitted vessel **1**

Falsification or failure to record required information **6**

Failure to comply with at-sea observer coverage requirements **4**

Fail to install, activate, repair or replace a VMS unit prior to leaving port **1**

Tamper with, or fail to operate and maintain a vessel monitoring system **1**

Failure to maintain an Atlantic HMS in the form specified **2**

Fish for, catch, retain or possess an Atlantic HMS at less than its specified minimum size limit **8**

Deploy or fish with any fishing gear from a vessel or anchor a fishing

vessel required to be permitted, in any closed area 1

Failure to carry required sea turtle bycatch mitigation gear 2

Assault, impede, obstruct or prevent any NMFS personnel collecting  
Information for NMFS under an agreement or contract. 1

**Specific Prohibitions for Atlantic Tunas:**

Fish under an Atlantic Tunas or HMS permit and receive unauthorized  
Transiting, landing or control assistance from another vessel 1

An Atlantic HMS Angling or Atlantic HMS Charter operator who  
fails to report a BFT 1

**Specific Prohibitions for Billfish:**

Fail to maintain a billfish in the form specified 1

**Specific Prohibitions for Sharks:**

Exceeding a recreational retention limit for shark 1

Failure to maintain a shark in its proper form 6

Sale or purchase of shark fins that are disproportionate  
to the weight of shark carcasses 1

Retention, possession, take, purchase or sale of a prohibited shark 2

Fish for Atlantic Sharks with unauthorized gear or possessing  
unauthorized gear aboard a vessel while fishing for Atlantic sharks 1

## APPENDIX 6

**FORM: COMP-010-INT-24**

**Report on Internal Actions Taken to Ensure That Tuna Vessels on the ICCAT Record of Vessels over 24 Metres Are Fishing in Accordance with ICCAT Management and Conservation Measures**

Please mark with an X the box(es) which apply to your party, entity or fishing entity. Additional information may be included in the "Comments" column

	Required	Optional	Not required	Comments
<b>1. Conditions under which authorization to fish is issued include:</b>				
compliance with, or ability to comply with, applicable ICCAT Conservation and Management Measures	<b>X</b>			
<i>Such measures include:</i>				
vessel monitoring systems	<b>X</b>			Inclusive of all pelagic longline vessels fishing for Atlantic highly migratory species regardless of size
conditions for reporting time series of catch and effort by vessel	<b>X</b>			NMFS selects 100% of commercial vessels utilizing commercial pelagic longline and bottom longline for Atlantic HMS. Logbooks capture catches in numbers of retained and discarded target species, weights, bycatch statistics by species, effort statistics appropriate to gear type by set, as well as temporal and spatial data. Additionally, mandatory observer coverage in certain portions of the fishery collect the above as well as additional information.
conditions for reporting total catch in number, nominal weight, or both, by species (both target and non-target) as is appropriate to each fishery period	<b>X</b>			See above
conditions for reporting discard statistics, including estimates where necessary	<b>X</b>			See above
conditions for reporting effort statistics appropriate to each fishing method	<b>X</b>			See above

conditions for reporting fishing location, date and time fished and other statistics on fishing operations	X			See above
reporting and other conditions for transshipping, where transshipping is permitted				Transshipment is prohibited by U.S. regulation.
observer coverage	X			Mandatory observer coverage requirements are triggered by gear type rather than vessel size. Pelagic and bottom longline vessels fishing for Atlantic highly migratory species are selected to achieve a goal of at least 8% of sets. Elevated levels of observer coverage are imposed in certain times and locations.
maintenance of fishing and related log books	X			See above
Other measures (please specify)				
<b>Compliance with other requirements:</b>				
where appropriate, compliance with other aspects of fisheries arrangements applicable to the flag State, entity or fishing entity	X			
possession of navigational equipment to ensure compliance with boundaries and in relation to restricted areas		X		
marking of fishing vessels and fishing gear in accordance with internationally recognized standards	X			
the vessel has a unique, internationally recognized identification number, that enables it to be identified regardless of changes in registration or name over time		X		Applicants for HMS permits are requested to provide an IMO or hull number, however, this is not a prerequisite for obtaining an HMS permit. Often vessels provide a U.S. Coast Guard documentation number or a State registration number.
Other measures (please specify)				
<b>2. LSFVs on the ICCAT record keep on board :</b>				
valid certificates of vessel registration	X			
valid authorization to fish and/or transship	X			Transshipment is prohibited by U.S. regulation.
<b>3. Authorization to fish includes:</b>				

the vessel name	<b>X</b>			
the name of natural or legal person authorized to fish	<b>X</b>			Permits for Atlantic highly migratory species are issued to the vessel owner for a specific vessel, which authorizes all individuals on board to fish. Individuals other than the vessel owner named on the permit may fish onboard the vessel, so long as it is covered by a valid permit.
the areas, scope and duration of the authorization to fish	<b>X</b>			
the species and fishing gear authorized	<b>X</b>			
other applicable management measures (e.g., closed area/seasons, minimum sizes)	<b>X</b>			Including but not limited to minimum sizes, species prohibitions, closed areas/seasons, hook and bait restrictions, bycatch disentanglement and release equipment, training, and certification requirements, other bycatch minimization regulations, landing form restrictions, and a requirement to sell to only permitted dealers
<b>4. Prevention of association with IUU fishing activities</b>				
ensure that vessels have not previously been engaged in IUU fishing activities, or are no longer associated in any way with such activities is required	<b>X</b>			
owners must be citizens or legal entities of the flag state, entity or fishing entity issuing the authorization	<b>X</b>			Recreational permits may be obtained by non-U.S. citizens regardless of vessel size.
<b>5. Transshipments</b>				
all LSFVs involved in transshipment at sea have a prior authorization to transship issued by the CPC				Not applicable. U.S. regulations prohibit transshipment at sea.
<b><i>LSFVs must report to the national fisheries administration or other designated institution the following:</i></b>				
the date and location of all of their transshipments of fish at sea				Not applicable. U.S regulations prohibit transshipment at sea.
the weight by species and catch area of the catch transshipped				Not applicable.

the name, registration, flag and other information related to the identification of the vessels involved in the transshipment				Not applicable.
the port of landing of the transshipped catch				Not applicable.
<b>6 . Punitive and Sanction actions</b>				
vessels which have not complied with the requirements above are subject to sanction by the flag CPC.	<b>X</b>			Multiple Federal and State agencies are authorized to enforce applicable regulations and levy penalties according to applicable U.S. statutes.